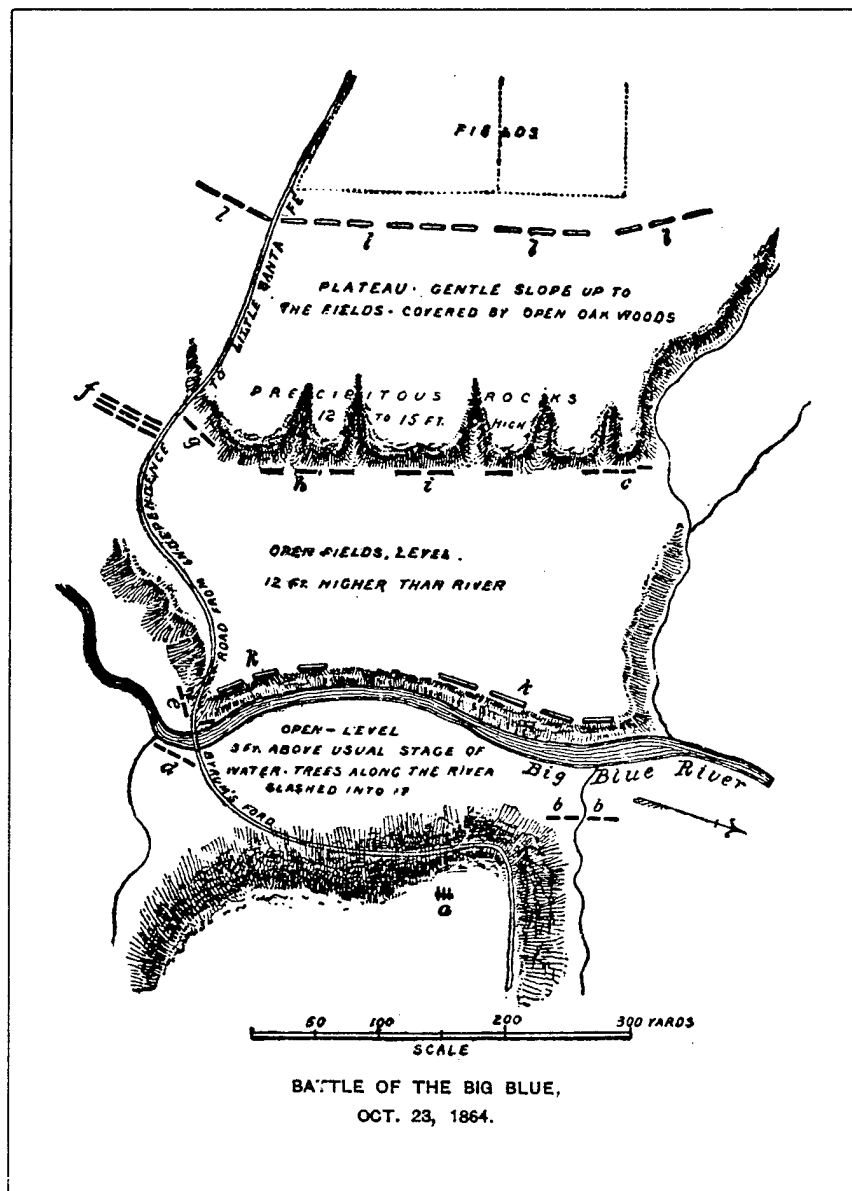


ARCHAEOLOGICAL DATA RECOVERY INVESTIGATIONS OF A PORTION OF THE BIG BLUE BATTLEFIELD IN KANSAS CITY, JACKSON COUNTY, MISSOURI



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**PHASE I ARCHAEOLOGICAL SURVEY
OF A PORTION OF THE BIG BLUE BATTLEFIELD
IN KANSAS CITY, JACKSON COUNTY, MISSOURI**

and Addendum

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Prepared for

**Burns and McDonnell
Kansas City, Missouri**

and

**U.S. Army Corps of Engineers, Kansas City District
Kansas City, Missouri**



**Corps of Engineers Contract DACW41-95-D-0016
Delivery Order 009**

By

Jason Marmor, M.A.

**TRC Mariah Associates Inc.
Laramie, Wyoming
MAI Project 02992-01**

June 1997

The study performed herein by the Contractor for the U.S. Army Corps of Engineers is authorized in the National Historic Preservation Act of 1966, as amended. Accomplishment of this work provides documentation evidencing compliance with Executive Order 11593 "Protection and Enhancement of the Cultural Environment" dated 13 May 1971, and Section 110 of the National Historic Preservation Act.

Funds for this investigation and report were provided by the U.S. Army Corps of Engineers. The Corps may not necessarily agree with the contents of this report in its entirety. The report reflects the professional views of the Contractor who is responsible for collection of the data, analysis, conclusions, and recommendations.

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ABSTRACT

TRC Mariah Associates Inc. conducted an intensive archaeological survey of an approximate 30-acre portion of the Big Blue Battlefield in Kansas City, Jackson County, Missouri. The inventory was required in advance of proposed flood-control levee construction under the purview of the U.S. Army Corps of Engineers, Kansas City District. The systematic survey involved both visual inspection and metal detector transects to search for evidence of the Civil War engagements which occurred in the vicinity of Byram's Ford (of the Big Blue River) on October 22 and 23, 1864. The Big Blue (or Byram's Ford) Battlefield (Site 23JA507) was evaluated as historically significant and is recommended as eligible for the National Register of Historic Places under Criterion A. Two definite and several potential military artifacts associated with the battle were recovered, and a relatively intact 1.32-acre portion of the battlefield (Site 23JA507, Locality A) was evaluated as contributing to the site's overall eligibility. This parcel is recommended for addition to the existing Byram's Ford Historic District. The proposed levee construction will have an adverse effect upon Locality A of Site 23JA507, for which mitigation is recommended. Data recovery by intensive metal detecting and artifact analysis is recommended as appropriate treatment for this site.

ACKNOWLEDGMENTS

TRC Mariah Associates Inc. expresses its sincere appreciation to the Civil War Round Table of Kansas City (CWRTKC) and the Kansas City Archaeological Society (KCAS), whose members assisted the archaeological survey of a portion of the Byram's Ford (Big Blue) Battlefield on March 16-17, 1996. Steven Treaster, Chairman of the CWRTKC's preservation arm, the Monnett Battle of Westport Fund (Monnett Fund), was instrumental in the volunteer recruitment effort. Former Monnett Fund Chairman Orvis Fitts generously shared his vast knowledge of the battle and the management of battlefield lands in the Kansas City area. CWRTKC members who participated in the field survey included Dewey Ballard, Jack Casner, Major Rob Dalessandro, Mike Epstein, Robert Glacken, Rick Graff, John Martin, Dick Piper, Irv Summers, and Jim Whitworth. Former CWRTKC President Gil Bergman also provided valuable insights into the use of artillery in the battles of Byram's Ford. Our appreciation is also extended to Jack Romine, President of the KCAS, for recruiting a number of capable volunteer archaeological technicians for the project. KCAS members and others who aided in the field survey included Larry and Jan Laird, Jim Rinacke, James E. Roberts, George Covill, Jim D. Feagins, Dick Keck, Cheryl Kenter, Bill Ghiselli, Rebecca Witte, Will and Drew Chubov, Chris Hulett, Carol and David Hohenfeldt, and James Finke. Finally, we wish to acknowledge the helpful assistance provided by Dr. Robert Ziegler and Mary Lucido of the U.S. Army Corps of Engineers, Kansas City District. We also thank the staff of Burns and McDonnell for their assistance.

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1.0 INTRODUCTION

This report presents the results of an intensive archaeological investigation of a portion of the Civil War battlefield near Byram's Ford, commonly referred to as the Big Blue Battlefield. The project was required in conjunction with a proposed federal undertaking consisting of a new flood-control levee construction project for a portion of the Big Blue River near Byram's Ford, administered by the U.S. Army Corps of Engineers, Kansas City District. TRC Mariah Associates Inc. (TRC Mariah), of Laramie, Wyoming, was contracted to conduct the inventory on behalf of Burns and McDonnell of Kansas City. Due to the location of the proposed project area within a known historic site--the Big Blue Battlefield--the archaeological survey was specifically focused upon the expected archaeological manifestations of that military event. Both field survey and archival research were included in the investigation. Fieldwork was completed on March 16-17, 1996; archival research was completed in March and April of 1996.

The project area is an irregularly shaped parcel located along the Big Blue River in southeastern Kansas City, Missouri (Figure 1.1). The portion of the project area on the east side of the Big Blue River is bounded on the east by Hardesty Avenue, on the south by the northern limit of a portion of the Byram's Ford Historic District, and on the north by a line corresponding to an imaginary western extension of 57th Street. The portion of the project area located west of the Big Blue River extends from 57th Street on the north to the north bank of the Big Blue River north of 63rd Street on the south. Its eastern boundary in part abuts the western edge of the existing Byram's Ford Historic District; further north, Cindy Street (in the defunct Cunningham Plaza subdivision) forms part of the western boundary for this part of the project area on the west side of the river.

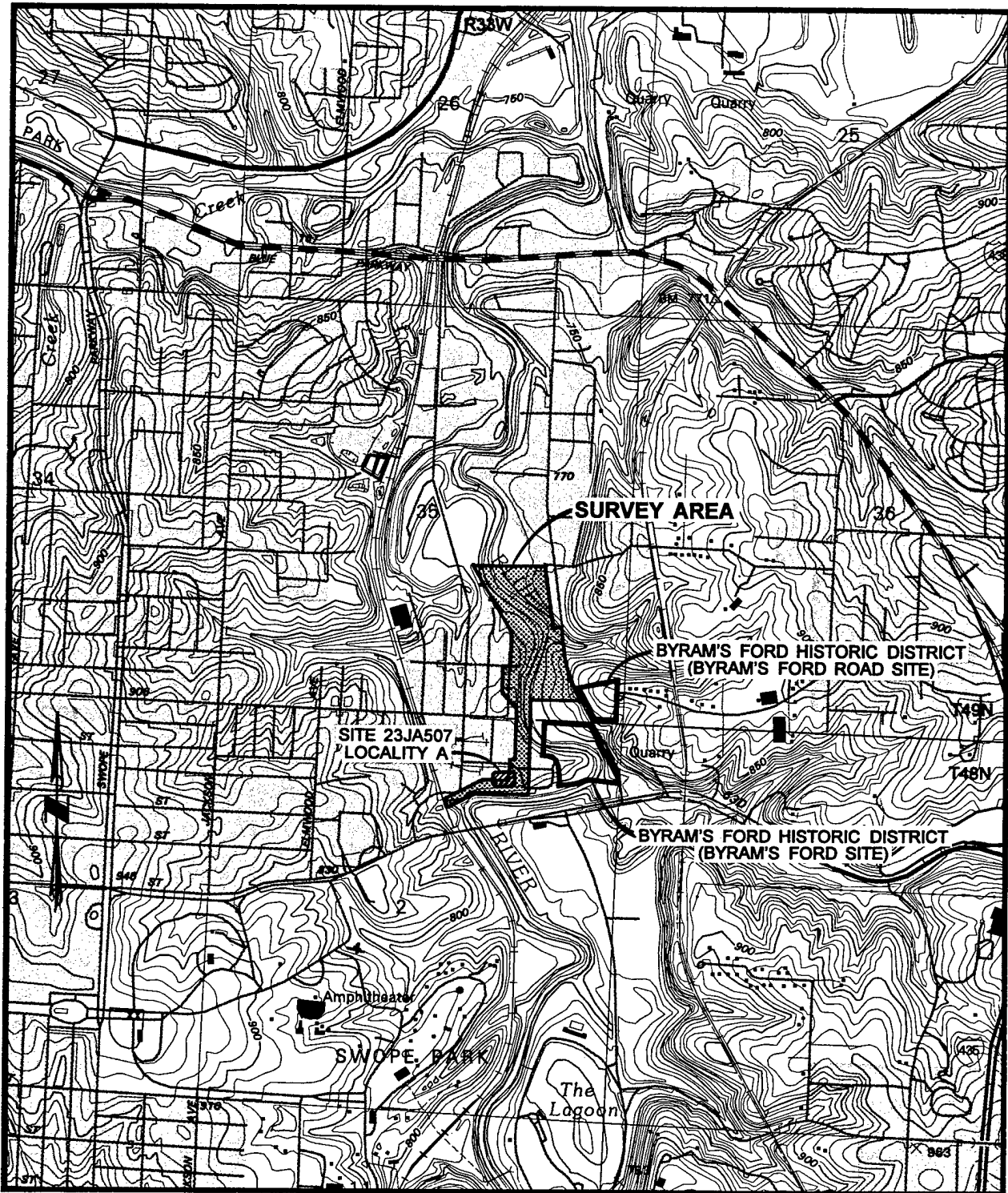


Figure 1.1 Location of the Big Blue Battlefield Survey Area for the Blue River Channel Modification Project, also Showing Location of Site 23JA507, Locality A. Taken from the Kansas City, Missouri-Kansas (1991), USGS 7.5' Series Topographic Quadrangle (1:24,000 Scale).

2.0 DESCRIPTION OF UNDERTAKING

The U.S. Army Corps of Engineers, Kansas City District, is proposing to complete channel and bank modifications along a portion of the Big Blue River near Byram's Ford. Approximately 30 acres of the historic Big Blue Battlefield lie within the Stage III right-of-way (ROW) for the Blue River Channel Modification Project (BRCMP). The purpose of the project is to reduce the recurrent risk of flooding by installing a series of artificial flow-control structures at key points in the river channel and by constructing a flood-control levee on the west and north banks of the Big Blue River. The current project design avoids direct impacts to the nearby Byram's Ford Historic District, which encompasses Byram's Ford river crossing and portions of the Byram's Ford Road on both sides of the river. The proposed flood-control levee will require the removal of buildings from the Byram's Ford Industrial Park and will traverse the southern edge of the presently undeveloped areas east and southwest of the Dupont Chemical Company building (located off of Manchester Trafficway and 60th Street). The levee will extend (generally parallel) along the west bank of the Big Blue River from a point approximately 300 ft north of 58th Street and will extend southward for approximately 1,900 ft (0.36 mi), crossing present 60th Street and continuing to a point west of the American Cyanamide building. At the latter location, the proposed levee will make a right-angle turn, following the sharp change in direction of the Big Blue River, and proceed west to southwest for at least 900 ft (0.17 mi) along the northern bank of the river nearly to the NNW-SSE trending Missouri Pacific/St. Louis and San Francisco Railroad grade. Potential impacts to cultural resources from the project include destruction or displacement of buried and surface artifacts and deposits from excavation of borrow ditches, and burial of such archaeological remains under a new earthen levee structure within the ROW corridor.

3.0 ENVIRONMENTAL SETTING

The project area is situated in the western section of the Glaciated Plains natural division of Missouri (Nelson 1987:3). It encompasses land on both sides of the Big Blue River and includes a serpentine stretch of the Big Blue River channel, along with adjacent terraces and slopes (Figure 3.1). The Big Blue River is a major tributary of the Missouri River, and it flows in a generally northward direction. It is referred to both as the Blue River and as the Big Blue River; the latter name distinguishes it from the drainage further east called the Little Blue River. This maturely dissecting watercourse is subject to periodic lateral channel migration. Its course northward through the eastern part of Kansas City is characterized by numerous bends and meanders, and Byram's Ford crosses the river just below a prominent meander loop. Elevations in the project area range from ca. 740 ft above mean sea level (MSL) near the river's edge to around 775 ft above MSL near the Dupont building on the terrace at the southern end of the project area. The southern portion of the project area



Figure 3.1 The Big Blue River Within the Project Area.

constitutes a high and relatively level terrace, approximately 30 ft above the normal river level. While a certain amount of grading and filling is evident as a result of construction of the Byram's Ford Industrial Park (Smith n.d.), historic maps reveal that this terrace was naturally relatively level (U.S. Geological Survey [USGS] 1940). Lower terraces, only about 10-12 ft above the normal river level, occur inside sweeping curves in the river channel. One lower terrace is found west of the river near the north-central portion of the project area, and another is situated on the east bank near the extreme north end of the survey area. On the east side of the river in the project area are relatively steep slopes descending from Hardesty Avenue toward the river channel.

The project area is underlain by sedimentary bedrock consisting primarily of Pennsylvanian-age limestones and sandstones. The margins of the Big Blue River floodplain are in part defined by outcroppings of Bethany Falls limestone, which occur in beds from 10 to 20 ft thick, and outcrops as pale ledges or scarps. One such ledge, which figured prominently as an obstacle to attacking Union forces during the second day's battle (October 23, 1864), is visible just west of the railroad corridor to the west of the present project area.

The soils within the project area are typical of the Kennebec-Colo-Bremer association found on the floodplains and terraces of the Missouri River tributaries (Soil Conservation Service 1984). The floodplain corridor of the Big Blue River contains moderately well-drained Kennebec soils characterized by very dark grayish brown silty loam over darker substratum with a higher clay content. The west side terraces, including the broad terrace occupied by the Byram's Ford Industrial Park, has soil classed as Bremer silt loam. This soil type is more poorly drained and has a surface layer of black friable silt loam over a dark silty clay loam subsoil. Bremer soils are often cultivated for crops such as corn, soybeans, and grains; in fact, the Byram's Ford Industrial Park was used in the nineteenth and twentieth century as farmland. The east side slope and terrace soils are classified as udifluvents consisting primarily of fill containing a mixture of man-made material and silty soil.

Plant communities in the project area consist primarily of a forested riparian corridor, with grasses (nonnative) dominating the western terrace now occupied by the Byram's Ford Industrial Park. The floodplain forest, which extends onto the east bank terraces and slopes, is a relatively dense zone of cottonwoods, elms, and willows. This riparian ecosystem is classified as either Wet-Mesic Bottomland Forest and/or Wet Bottomland Forest (Nelson 1987:53-56).

A high percentage of the project area exhibits the effects of post-bellum development and ground disturbance. These modifications of the natural environment are particularly extensive in that portion of the project area west of the Big Blue River. Twentieth-century development, such as Byram's Ford Industrial Park in the south and the Cunningham Plaza subdivision in the north, have resulted in widespread disturbance by grading, filling, installation of utility lines (including railroad spurs) as well as aboveground structures and landscaping. Nevertheless, a recent study conducted by the U.S. Army Corps of Engineers determined that an intact historic plowzone still exists in limited areas within the industrial park (Nickens 1992:1).

The portion of the survey area east of the Big Blue River (and west of Hardesty Avenue), while relatively undeveloped, has been subjected to extensive alluvial deposition and erosion due to repeated flood events. The dynamic nature of the soil along the east bank of the Big Blue River is evident from buried tree trunks, vegetation flattened by flowing water, etc. A geomorphological analysis by Lawson Smith showed that most of the soil along the east bank of the Big Blue River was recently deposited material resulting from lateral migration of the river channel and flood deposition (Smith n.d.). In addition, the hydrology of the east bank has been changed by the construction of Hardesty Avenue and by the artificial control of drainage in the ravine in the center of the east-bank side of the project area.

4.0 SURVEY OBJECTIVES

As presented in an earlier research design for the Big Blue Battlefield survey (Marmor 1996:4-5), research objectives for the project are specifically oriented towards the recovery of information relating to the Civil War battles which occurred along the Big Blue River around Byram's Ford. Seven specific research objectives appropriate to inventory-level investigation were defined for the project:

1. to determine the spatial distribution of any material remains associated with the military engagements in the vicinity, including earthworks, surface artifacts, and subsurface metallic artifacts;
2. to determine if any portion of the Byram's Ford Road remains extant within the survey area;
3. to determine the archaeological integrity of artifacts or deposits associated with the Battle(s) of the Big Blue, based in part upon previous geomorphological investigations;
4. to attempt to interpret the meaning and explain the spatial distribution and frequencies of any Civil War materials found during the survey, and to relate and compare the physical evidence to the historical record of the engagements which occurred here;
5. to gauge the level of disturbance in the survey area due to previous avocational collecting (surface and subsurface) by Civil War enthusiasts and its effect on the archaeological record of the battle;
6. to recover a collection of battlefield artifacts for analysis, curation, and possible interpretation; and

7. to compare the archaeological data from this portion of the Big Blue Battlefield with archaeological data recovered from other Civil War battlefields, in particular the Mine Creek Battlefield in Kansas (fought on October 25, 1864, during Price's retreat from Westport). The Mine Creek fight and the Battle of the Big Blue involved essentially the same participants, and comparative analysis may yield insights concerning such matters as weaponry and tactics employed by the combatants.

5.0 METHODS

To complete the archaeological investigation of the 30-acre portion of the Big Blue Battlefield within the BRCMP ROW, TRC Mariah proposed a combination of archaeological survey techniques, artifact analysis, subsurface testing, archival research, and interviews of local relic collectors. Each of these methods employed in the project is detailed below.

5.1 ARCHAEOLOGICAL SURVEY

A systematic archaeological survey of the project area was completed by conducting intensive pedestrian (visual) inspection of the ground surface concurrently with remote sensing for surface and subsurface metallic artifacts with the aid of electronic metal detectors. Applying the methodology used successfully by other military sites investigators (Scott et al. 1989; Lees 1994; Haecker 1994), the surveyors/metal detector operators were aligned at approximate 10-16 ft transect intervals, and each swept a path approximately (5-7 ft) wide (Figure 5.1). The detector operators were also instructed to visually scan the ground surface for any exposed battle-related artifacts and features (e.g., earthworks). A variety of metal detectors provided by volunteer operators were used in the survey. Like models of metal detectors were separated from one another where possible to minimize on interference from units operating at the same transmitting frequency.

Approximately 10 metal detector operators and surveyors systematically searched for battle-related artifacts and features by walking a series of parallel transects across the areas of the parcel judged to have the potential for evidence of the battle. The actual coverage of the survey area by metal detector operators and visual surveyors was dictated by such variables as modern disturbance, apparent flood erosion and soil deposition, extensive trash deposition, and vegetation cover. In several areas within the project area, metal detecting and visual survey was curtailed when it became apparent that flood processes had reworked the soils such that no potential existed for intact cultural resources. Field conditions in specific portions of the survey area are described in detail in Section 8.0.

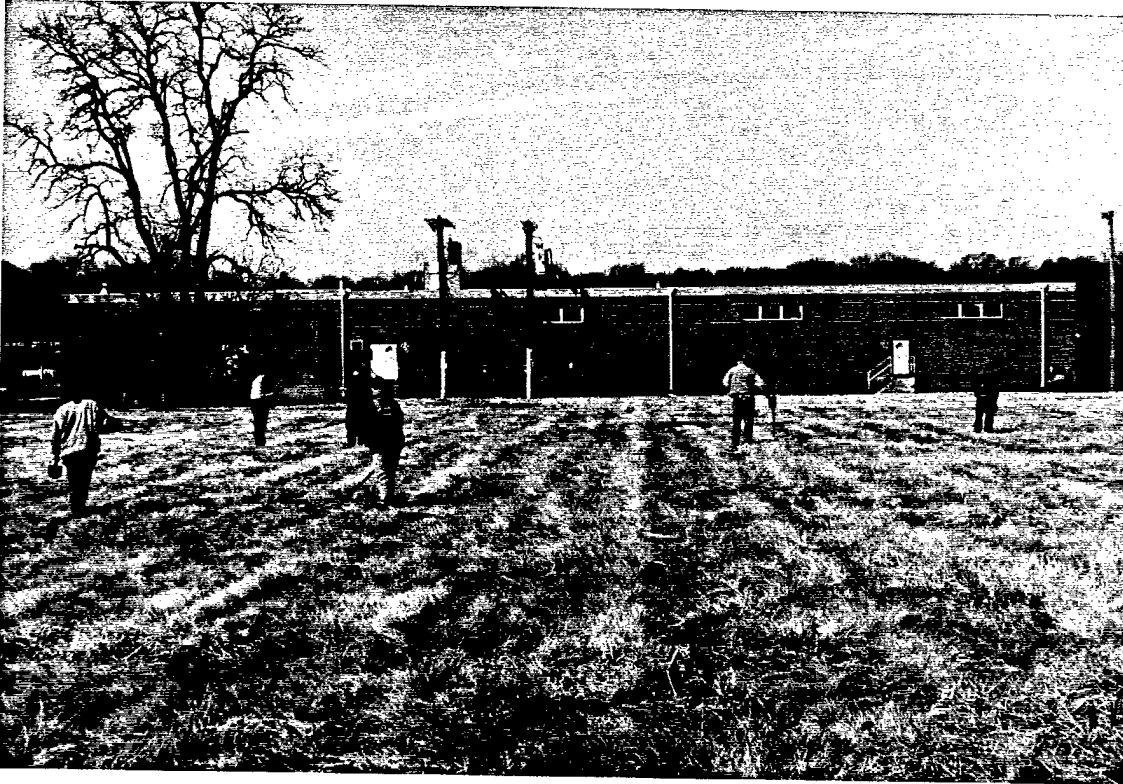


Figure 5.1 Metal Detector Operators Walking Parallel Transects in Big Blue Battlefield Survey Area.

Locations of surface artifacts and metal detector signals were marked with surveyors' pin flags and left in place during the initial sweep. Metal detector target locations marked by pin flags were then excavated and/or collected. When possible, the approximate depth of buried artifacts was noted. With one exception, only artifacts with a possible association with the battle events were collected. Each potential battle-related artifact was assigned a unique field specimen number which was marked on the bag containing the artifact, as well as in a field specimen log. Prior to collection, the provenience of each specimen was individually recorded by measuring distances and bearings from an arbitrary datum point. The location of the solitary datum point required during the survey was established by triangulation of distances and bearings to the eastern corners of the Dupont Chemical Company building. Using a Brunton Pocket Transit and a calibrated metric tape, distances and bearings were taken from the datum point to each artifact. This provenience of each artifact was also plotted on a scaled field map. The stratigraphic position of each field

specimen was noted. Color photographs of the fieldwork in progress were taken at various places within the project area.

5.2 ARTIFACT ANALYSIS

Artifacts recovered during the archaeological survey of the BRCMP study area were processed and analyzed at TRC Mariah's archaeology laboratory in Laramie, Wyoming. Each collected artifact was cleaned, measured and weighed (if appropriate), described, and identified. Identifications of military artifacts such as bullets and uniform parts were made by consulting reputable references, such as those cited in other recent archaeological investigations of Civil War military sites (cf. Smith 1994; Legg and Smith 1989). Bullets were classified as either fired or unfired. To facilitate the analysis of troop movements, a study was made of the small arms used in the battle(s). This ancillary study is provided in Appendix A.

Once laboratory processing was completed, the spatial distribution of the artifact assemblage was analyzed with respect to the known history of the battle. It was anticipated that counts and relative frequencies of artifact types could be calculated and that the spatial patterning of fired vs. unfired (lost or dropped) bullets could be used to determine troop positions following Lees's (1994) example; however, the paucity of ammunition recovered during the survey precluded the application of these methods.

5.3 SUBSURFACE TESTING

Limited subsurface testing was conducted to search for stratigraphic evidence of the trace of Byram's Ford Road through a small portion of the project area on the west side of the Big Blue River, as indicated on historic maps and aerial photographs and based on extrapolation from known locations of other segments of Byram's Ford Road as documented in Miller and Walsh (1995:Figure 9). Shovel tests were employed in transects across the

expected path of Byram's Ford Road to allow examination for a traffic compacted surface or evidence of possible roadbed improvement (e.g., grading, gravel surfacing). A series of shovel tests were placed in transects perpendicular to the expected historic road trace, and their locations were plotted on a large-scale map. Each test was dug to a depth of approximately 30 cm. The soil profiles within these holes were described, including determinations of soil color using a Munsell color chart.

5.4 ARCHIVAL RESEARCH

Although a considerable amount of archival research has already been completed for the Big Blue Battlefield, TRC Mariah conducted additional research focused upon the actions involved in the Battle of the Big Blue which occurred specifically within the BRCMP study area. The recently completed report produced by Gray & Pape, Inc. (Miller and Walsh 1995), which provides a detailed historical narrative of the battle around Byram's Ford, was carefully reviewed. A wide variety of sources was examined, including published and unpublished accounts of the battle (both primary and contemporary), as well as early maps and aerial photographs showing changes in land use of the area over time. Archival research was conducted at the following institutions and repositories: the Missouri Valley Room of the Kansas City Public Library; the State Historic Preservation Office in Jefferson City, Missouri; the Jackson County Historical Society in Independence; the Jackson County Courthouse, Kansas City; the Kansas City District Office of the U.S. Army Corps of Engineers; and at the Combat Studies Institute at Fort Leavenworth, Kansas. Additionally, a review was made of the archival materials maintained by the CWRTKC, courtesy of Mr. Orvis Fitts and Mr. Steven Treaster. Finally, a cultural resource file search was requested from the Missouri Archaeological Survey in Columbia.

5.5 ORAL INTERVIEWS

In order to gauge the intensity of past avocational military relic collecting from the battlefield and to ascertain the types of materials which have been removed from the vicinity of the project area, TRC Mariah conducted informal interviews with local military historians and relic collectors. These informants were solicited from the CWRTKC and from Kansas City area metal detector dealers. Additional informants surfaced after publication of newspaper stories concerning the present archaeological investigation for the BRCMP. The results of these interviews are presented in Section 6.3 of this report.

6.0 PREVIOUS INVESTIGATIONS

In advance of the field survey, TRC Mariah reviewed existing information about previous investigations and sites recorded within or in proximity to the present project area. This review involved examination of cultural resource project files for Jackson County, as well as the files associated with the American Battlefield Protection Program provided by the National Park Service (NPS). A file search was conducted by the Archaeological Survey of Missouri (ASM) on April 3, 1996. Virtually all site and survey information was available in Miller and Walsh's 1995 survey report and historic preservation plan for the Big Blue Battlefield. This information is summarized in Section 5.1. In addition to cultural resource investigation data, a detailed review was made of the avocational collection of battlefield artifacts from the Byram's Ford area; this information is presented in Sections 6.1 and 6.2.

6.1 PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS IN THE BYRAM'S FORD AND BIG BLUE BATTLEFIELD AREAS

Four previous cultural resource surveys have been conducted in the vicinity of the Big Blue Battlefield and Byram's Ford. The first such survey was conducted by Commonwealth Associates, Inc. for the Blue River Channel Project under contract to the U.S. Army Corps of Engineers, Kansas City District (Fitting et al. 1978). The investigators misidentified the location of Byram's Ford as being where the 63rd Street bridge crosses the Big Blue River, and the "area" was determined to be heavily impacted and lacking in "contextual integrity."

Another cultural resource investigation was conducted in 1980 by David R. Evans and David J. Ives, in advance of proposed sewer line construction along the Big Blue River. Like Fitting et al. (1978), Evans and Ives incorrectly placed the location of Byram's Ford at the 63rd Street bridge, and they concluded that the historic site was already "heavily disturbed by various kinds of construction, including road building and residential/commercial development" (Evans and Ives 1980:14-15). In both the 1978 and 1980 investigations, the

ford is described as the scene of the battle, with virtually no reference to a larger battlefield area extending west of the ford.

In 1993, Jeffrey K. Yelton completed an archaeological survey for the City of Kansas City in conjunction with planned replacement of the 63rd Street bridge (Yelton 1993). Yelton did not repeat the errors of earlier investigators concerning the location of Byram's Ford, and his report also makes reference to the larger Big Blue Battlefield. The 1993 survey was limited to the vicinity of the 63rd Street crossing, however, and no Civil War-period artifacts or features were encountered.

The most recent archaeological investigation of the Big Blue Battlefield and Byram's Ford was conducted in 1995 by Gray & Pape, Inc. of Cincinnati, Ohio (Miller and Walsh 1995). Gray & Pape, Inc.'s study involved an extensive reconnaissance survey in the vicinity of Byram's Ford and development of a preservation plan for the battlefield. The survey was limited to approximately 240 acres consisting of lands administered by the Monnett Fund of the Civil War Round Table of Kansas City and city-owned property within Swope Park. Civil War-period cultural resources or potential resources documented by the reconnaissance survey included three locations of possible field fortifications (Sites 23JA495, 23JA497, and 23JA498) and three segments of the historic Byram's Ford Road (Site 23JA496). These sites are discussed in greater detail below in Section 6.2. The Gray & Pape, Inc.'s investigation included a narrow sliver of land along the north bank of the Big Blue River extending across the southern edge of Byram's Ford Industrial Park, along the southern limit of the present investigation. Other areas surveyed in 1995 outside of Swope Park included the east and west bank approaches to the ford and lands extending north from 63rd Street across the slope of "Bloody Hill" east of the Burns and McDonnell building and west and northwest of the Pepsi-Cola building.

An archaeological assessment of limited scope has been conducted in the vicinity of Byram's Ford specifically for the BRCMP. In 1992, archaeologist Paul Nickens and geologist Lawson

Smith from the U.S. Army Waterways Experiment Station at Vicksburg, Mississippi, conducted an informal assessment of the geomorphology and archaeological potential of lands along the Big Blue River near Byram's Ford. Seven soil profiles were examined from cores and sideslope exposures on both banks of the river, and these data were augmented with historical documentation including older aerial photographs and historic maps. The investigators concluded that the alluvial deposits along the east bank of the Big Blue River were of recent origin, due to active lateral movement and periodic flooding of the watercourse. The higher west bank terrace was found to be more geologically stable, and evidence was found of a natural soil profile with an upper historic plowzone at undeveloped locations within the Byram's Ford Industrial Park (Smith n.d.). Based on this cursory survey, the investigators judged the east bank lacking in archaeological preservation, but recommended that metal detectors and construction monitoring were appropriate for archaeological investigation of the battlefield on the high terrace west of the Big Blue River (Nickens 1992).

6.2 PREVIOUSLY RECORDED CULTURAL RESOURCES

A portion of the Big Blue Battlefield, designated Byram's Ford Historic District, is entered on the National Register of Historic Places. Robert J. Ziegler and Hugh Davidson of the Missouri Historic Preservation Program prepared the nomination in June of 1989 for the Civil War Round Table of Kansas City. The Byram's Ford Historic District contains two separate parcels, both located in close proximity to the present project area. One parcel, encompassing a portion of the old Byram's Ford Road as it descends from a bluff to approach the east side of the ford on the east side of present Hardesty Avenue, is designated as the "Byram's Ford Road Site." The other parcel, located southwest from the Byram's Ford Road Site on the opposite side of Hardesty Avenue and encompassing the ford itself, is designated as the "Byram's Ford Site" (Ziegler and Davidson 1989). These parcels comprising the Byram's Ford Historic District are integral elements of the Big Blue Battlefield.

An archaeological site file search conducted for TRC Mariah by the ASM for Section 2, T48N, R33W, and Section 35, T49N, R33W, indicated that there are seven previously recorded cultural resources within the two sections. Three of the sites (Sites 23JA58, 23JA102, and 23JA436) are manifestations of prehistoric aboriginal activity, all of which occur to the south of the present project area, south of 63rd Street along the Big Blue River. Site 23JA58 is identified as a large prehistoric Woodland/Mississippian habitation site (covering at least 4,715 m²) situated on the east side of the river. Site 23JA102 was recognized as a prehistoric Middle Woodland site on the west side of the Big Blue River in Swope Park. Site 23JA436 is a lithic scatter of unknown cultural affiliation located on the east bank of the Big Blue River on the northeast margin of the "Lagoon" (Miller and Walsh 1995:18).

The other four sites (Sites 23JA495-23JA498) identified by the file search are historic sites recorded during a recent archaeological reconnaissance of the Big Blue Battlefield (Miller and Walsh 1995). These features, all near but not within the present project area, are associated or potentially associated with the Civil War military engagements fought around Byram's Ford on October 22 and 23, 1864.

Site 23JA495 was identified as a "suspected entrenchment complex associated with the Battle of the Big Blue," located on the eastern slope of "Bloody Hill" to the south of 63rd Street in Swope Park (Miller and Walsh 1995:50). The features recorded as Site 23JA495 consist of two parallel linear embankments, one higher on the slope than the other. The longer of the two embankments makes a turn to the west at its southern end. The site is located close to a construction materials storage area (for Swope Park) just upslope of the features. No artifacts were found in association with Site 23JA495, and its origin remains unverified.

Site 23JA496 represents the old Byram's Ford Road. Three separate segments of the historic road were identified by Miller and Walsh (1995:52). One portion of the road is situated on the top and western slope of the bluffs east of the Big Blue River, east of

Hardesty Avenue but near the approach to the ford. Another well-defined and deeply entrenched portion of the road was recorded as it climbs out of the Big Blue River channel and up onto the terrace west of the river, near the eastern limit of the Byram's Ford Industrial Park. A third intact segment of Site 23JA496 is located on the bluff immediately west of the Pepsi-Cola building, parallel to a paved road (60th Street Terrace) associated with the defunct Cypress Ridge subdivision. While none of these segments of the old Byram's Ford Road occur within the present project area, the trajectories of the two segments of Site 23JA496 west of the Big Blue River on either side of the Byram's Ford Industrial Park indicated that the trace of the abandoned roadway passes through a portion of the project area. As noted in the research design for this project (Marmor 1996), one objective of the current investigation was to determine if a portion of the Byram's Ford Road can be discerned within the industrial park.

Site 23JA497 was tentatively recorded by Miller and Walsh (1995:53) as an earthen embankment and knob with a possible but uncertain identity as a Civil War-period earthwork associated with the Battle of the Big Blue. The site is located on the northeast-facing slope of "Bloody Hill," nearly 0.5 mi west of Byram's Ford, between the Pepsi-Cola building and the Burns and McDonnell building. The features, which appeared to be strategically located for an artillery position, are very close to a standing garage ruin, and the investigators believed it was likely the product of twentieth-century disturbance rather than a field fortification.

Site 23JA498 is another possible embankment earthwork identified by Miller and Walsh (1995:53). The site is located on the eastern terrace of the Big Blue River, close to the trace of the Byram's Ford Road which begins the road's descent to the river crossing. The embankment was curved, and its position, morphology, and eroded appearance suggested that it represented a Civil War-period gun emplacement or small rifle entrenchment.

6.3 AVOCATIONAL BATTLEFIELD RELIC COLLECTING

The Big Blue Battlefield has been extensively collected since the early twentieth century; however, it has only been in the last two to three decades that relic collectors have had a formidable tool--the electronic metal detector--to enable buried artifacts to be readily found. There is no question that significant numbers of battlefield relics, including munitions and uniform buttons and insignia have been removed from the Byram's Ford area.

Perhaps the earliest documented collection from the Big Blue Battlefield was reported by the Reverend Paul Jenkins in his book *The Battle of Westport* (1906). A photograph presented in this work displays a wide variety of small arms and artillery ordnance recovered from the battlefield during plowing of fields near Byram's Ford (Jenkins 1906:Plate X).

There is evidence for additional battlefield relic collecting in the early to mid-twentieth century by residents living near Byram's Ford. For example, one informant who lived on Chelsea Street and later on East 60th Street from the late 1920s collected several bullets of different types in the cornfield near the ford (Norman Mansell, personal communication, March 19, 1996). Another informant and long-time Kansas City resident reported finding a spherical cannon ball on the north side of 63rd Street, as well as a "Minie ball" south of 63rd Street in Swope Park (Henry Lang, personal communication, March 19, 1996).

Numerous avocational metal detector enthusiasts report collections of military artifacts from the Big Blue Battlefield near Byram's Ford. One anonymous metal detector operator, for example, claims to have found 45 "Minie balls," two solid cannon balls, and fragments of a hollow cannon ball. Of these finds, this informant (who desires anonymity) indicated that 15 or 20 of the bullets were found on the north side of 63rd Street, including one "Minie ball" near the Dupont building, and two Spencer carbine cartridge cases were found near Byram's Ford Road near the ford. Another metal detector enthusiast reportedly found "about a dozen" bullets in or near the Byram's Ford Industrial Park, and this same relic

collector was said to have regularly metal-detected this area in the company of fellow detector operators (Rick Graff, personal communication, March 19, 1996). Yet another collector, Ronald Sapp, claimed to have found a gilt crossed-saber insignia from the south side of 63rd Street.

The "mining" of military artifacts left behind in the Battle of the Big Blue was conducted in perhaps the most determined manner by local metal detector dealer Robert Tatham. Over a period of years, Tatham has collected a large and varied assortment of munitions, uniform and weapon parts, and other military paraphernalia from the Byram's Ford vicinity. In one case, Tatham displayed finds recovered from "near Byram's Ford," which included a belt buckle, Sharps derringer, cannon ball fragments, and bullets (Tatham 1982:69). In 1978, when Burns and McDonnell expanded its parking lot, Tatham and an associate obtained permission to sweep the bulldozed parcel with metal detectors, and during a several day long stretch during which construction was delayed by rain, they recovered a diverse assemblage of military artifacts including numerous bullets of several types, a Union Army belt buckle, a gold coin, a lock and hammer from a rifled musket, a suspender buckle, an identification tag, a powder flask spout, a scabbard tip, a uniform ornament, a rifle butt plate, the tip of an 1855 pistol, and a fastener from a leather cartridge case (Anonymous 1990:8; Tatham 1980:14). While it is impossible to measure the volume of material removed from the battlefield by relic collectors, there can be little doubt that the archaeological record of the Battle of the Big Blue has been diminished by these activities.

7.0 HISTORICAL BACKGROUND

The Battle of the Big Blue occurred on October 22 and 23, 1864. It was a prelude to a much larger battle at Westport on October 23, which has been referred to as the "Western Gettysburg" (Jenkins 1906:7). The Battles of the Big Blue and Westport were the turning points in the raid into Missouri of Confederate general and Missourian Sterling Price, whose mission was to divert Union troops from the critical southeastern theater, to capture the strategic river port city of Saint Louis, and to raise large numbers of recruits for the Confederate Army along the way (Castel 1968:202). After a costly battle with Union troops at Pilot Knob, Missouri, on September 27, Price altered his plans and led his approximately 12,000 strong "Army of Missouri" west towards Kansas City. In anticipation of Price's threat to Kansas City, Union Major General Samuel Curtis, commanding the "Army of the Border," massed a force there of approximately 20,000 regular troops and state militia. Curtis then dispatched a force under Major General James Blunt east to delay the arrival of Price, and a series of skirmishes were fought between Lexington and the Little Blue River. In the meantime, Major General Alfred S. Pleasonton was leading a provisional cavalry division west from Saint Louis in pursuit of Price.

At Kansas City, Curtis ordered the construction of numerous defensive positions along the west bank of the Big Blue River, including rifle pits and abatis. Curtis's fortified line extended for a distance of approximately 15 mi along the Big Blue, from its mouth at the Missouri River on the north to the vicinity of Hickman's Mills on the south (Curtis 1864, in Davis et al. 1893:478-479). On the evening of October 21, General Blunt's force crossed the Big Blue and rejoined the Union troops preparing to defend Kansas City and Westport. Blunt was placed in charge of the Union's right wing, extending from the main river crossing of the Independence to Kansas City Road (near today's 27th Street) south to Russell's Ford (near Hickman's Mills). The Union left wing was placed under the command of General Deitzler, comprising that part of the defense line extending from the main Big Blue River crossing north to the Missouri River.

The federal troops and state militia were massed primarily at the few established fords along the Big Blue, including the main crossing of the Independence to Kansas City Road, Simmon's Ford (2 mi south), and Byram's Ford, 3 mi further upstream (Monnett 1995:71-72) (Figure 7.1). Another force of Kansas State Militia were posted to defend Russell's Ford, several miles south of Byram's Ford. Another ford--Hinkle's--used primarily for crossing cattle, lay between Simmon's Ford and Byram's Ford. The approximate location of Hinkle's Ford probably was situated on a tract of land adjacent to the Big Blue River owned by J.P. Hinkle, Section 24, T49N, R33W (Brink, McDonough & Co. 1877:53). There are conflicting reports in *The War of the Rebellion: the Official Records of the War of the Union and Confederate Armies* (Davis et al. 1893) concerning the troop dispositions at Hinkle's Ford, where according to Monnett (1995:72) the Confederates found and exploited a weak spot in the Union line along the Big Blue. General Blunt reported that on the morning of October 22, 1864, he had dispatched Colonel Thomas Moonlight's Second Brigade, composed of several companies of Kansas Cavalry, "to Hinkle's Ford, about two miles above the main crossing" (Blunt, in Davis et al. 1893:480). Major Charlot, assistant adjutant general on General Curtis's staff, also stated in his report that Moonlight was holding Hinkle's Ford (Charlot, in Davis et al. 1893:483). However, Colonel Moonlight's report indicated that the Second Brigade under his leadership was "ordered to hold Simmon's Ford, and report the movements of the enemy" (Moonlight, in Davis et al. 1893:593). Assuming Moonlight's first-hand report to be accurate, then Hinkle's Ford was indeed undefended and a vulnerable breach in the Union line. According to Monnett (1995:72), the 10th Kansas State Militia led by Colonel William Pennock and a section of the 2nd Kansas Battery was also in place at Simmon's Ford on the morning of October 22.

7.1 THE BATTLE OF BYRAM'S FORD, OCTOBER 22, 1864

Byram's Ford, a major crossing of the Big Blue River on the Independence to Little Santa Fe Road, a variant of the Santa Fe Trail which also was used as a secondary road to Westport, was recognized by General Curtis as a key position on the Union defense line

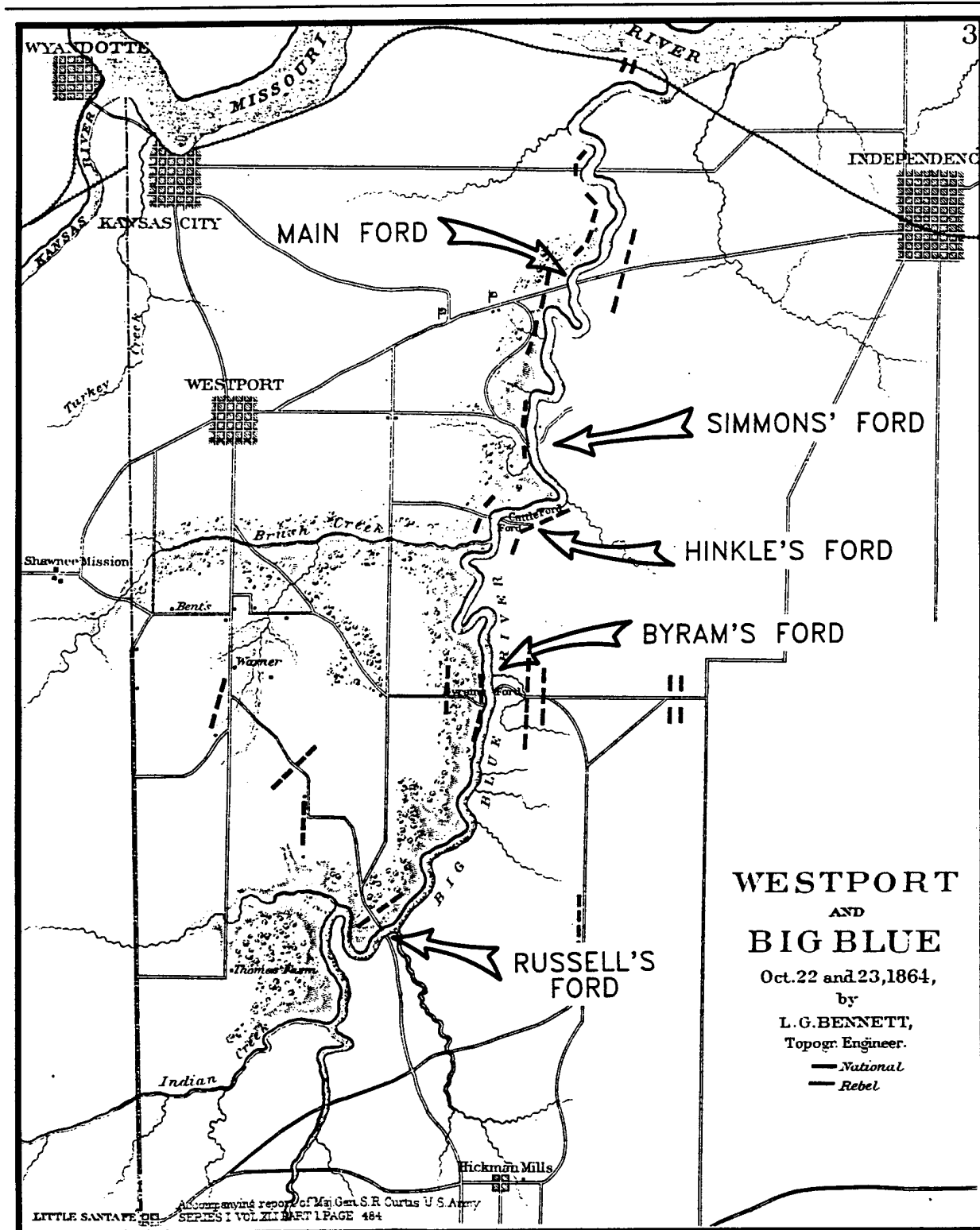


Figure 7.1 Map Accompanying Report of Major General S.R. Curtis in Official Records of the Union and Confederate Armies (Davis et al. 1893), Showing Fords Along the Big Blue River.

east of Kansas City. By the morning of October 22, Colonel William D. McCain and the 4th Regiment Kansas State Militia (part of Colonel Charles Blair's 3rd Brigade under General Blunt's command) had taken up positions on the west side of Byram's Ford (Blair, in Davis et al. 1893:482). Colonel Charles Jennison's 1st Brigade was ordered to bolster the defense of the ford the same morning, and under Jennison's command, the troops set to work felling trees and constructing abatis to obstruct the crossing (Jennison, in Davis et al. 1893:584). The defenses along the river were strengthened by the emplacement of a battery of five 12-lb mountain howitzers commanded by Second Lieutenant Henry L. Barker on the road on the west bank of the ford (Jennison, in Davis et al. 1893:584; Hinton 1865:16) (Figure 7.2).

After making a feint at the main river crossing well north of Byram's Ford, Price attempted to force a crossing at Byram's Ford. While Confederate Colonel Sidney Jackman's Missouri Cavalry continued to press a weak attack at the main ford of the Blue River, Confederate General Jo Shelby, assisted by M. Jeff Thompson's Brigade (Shelby's Iron Brigade) moved south looking for a suitable crossing point on the right wing of Curtis's line. Shelby decided to concentrate his forces at Byram's Ford and was soon rejoined by Colonel Jackman's cavalry. The attack commenced about 11:00 in the morning, but the obstructions at the ford seriously hindered the Confederates' attempts to move their artillery across, and the Union skirmish line and artillery repeatedly repulsed the waves of dismounted troops of General Jo Shelby's Division. The stalemate continued for several hours at Byram's Ford.

Around 2:00 that afternoon, General Shelby sent forces north and south looking for suitable river crossings, while Colonel Jackman continued to press a frontal attack. Lieutenant Colonel Alonzo Slayback's Missouri Cavalry Battalion soon discovered the unguarded Hinkle's cattle ford just north of Brush Creek, and once across, his troopers swung south to attack Jennison's left flank (Hinton 1865:129; Monnett 1995:79-81). Taken by surprise, the 1st and 3rd Brigade troops continued fighting as they withdrew to the west, toward Westport. The flanking attack enabled Shelby's troops to continue their work removing

obstacles to allow their artillery and wagon train to cross, and soon the Confederate cavalry was pressing the attack westward along the Byram's Ford Road (Thompson, in Davis et al. 1893:666). Although General Blunt dispatched reinforcements to help Jennison to hold the ford, by the time they arrived it was too late and the federal forces were in full retreat. An eyewitness to the battlefield at Byram's Ford soon after the action described the scene:

...there were signs of very severe fighting that day. Broken wagons, cannon-balls, shells, and dead bodies were scattered along the road for two miles. The dead seemed nearly all to be of the Kansas militia and the rebels. [S.S. Curtis, in Davis et al. 1893:533].

After Jennison's troops fell back, Price's army camped on the west side of the river the evening of the 22nd, and the entire Confederate supply train crossed at Byram's Ford. According to historian Howard N. Monnett (1995:93, 118), Price's wagon train consisted of approximately 600 heavily laden wagons accompanied by a herd of 3,000 beef cattle "guarded" by General William Cabell's Brigade and several thousand unarmed Confederate recruits. After crossing the Big Blue, the Confederate wagon train proceeded laboriously towards Little Santa Fe. Thus ended the first engagement at Byram's Ford, near the present project area.

7.2 THE SECOND CONTEST AT BYRAM'S FORD, OCTOBER 23, 1864

The second engagement near the project area occurred the following day, October 23, 1864 (Figure 7.3). The Confederate rear guard under the command of Major General John S. Marmaduke was still east of the Big Blue during the evening of October 22, with General Pleasonton's provisional cavalry division pressing behind them on the Byram's Ford Road. That evening Marmaduke retired across the Big Blue to bivouac and take up defensive positions on the west bank. While the rest of the Confederate "Army of Missouri" was positioned further east near Westport, Marmaduke was determined to hold Byram's Ford and prevent Pleasonton's hardened troops from crossing the Big Blue.

Approximate Troop Positions - Battle of Byram's Ford, October 22, 1864

Union Troops

- U1 Army of the Border, Provisional Cavalry Division (General Blunt)
 1st Brigade - Colonel C.R. Jennison
 3rd Wisconsin Cavalry (detachment)
 15th Kansas Cavalry
 Foster's Missouri Cavalry Battalion
 3rd Brigade - Colonel C.W. Blair
 4th Kansas Militia - Colonel W.D. McCain
- U2 Barker's Battery (Five 12-lb mountain howitzers)

Confederate Troops

- C1 Army of Missouri, Shelby's Division
 Jackman's Brigade - Colonel S.D. Jackman
 Hunter's Missouri Cavalry
 Jackman's Missouri Cavalry
 Schnable's Missouri Cavalry Battalion
 William's Missouri Cavalry Battalion
 Collin's Missouri Battery (2 guns)*
- C2 Shelby's Iron Brigade - General M. Jeff Thompson
 11th Missouri Cavalry
 12th Missouri Cavalry
 Crisp's Cavalry Battalion
 Eliot's Missouri Cavalry
 Johnson's Cavalry Battalion
 Collin's Missouri Battery (2 guns)*
- C3 Slayback's Missouri Cavalry Battalion - Lieutenant Colonel A. Slayback

* Not engaged in combat on October 22.

Legend for Figure 7.2



Figure 7.2 Approximate Troop Positions on October 22, 1864, During (First) Battle of Byram's Ford. Shown on Kansas City, Missouri-Kansas (1991), USGS 7.5' Series Topographic Quadrangle (1:24,000 Scale).

Approximate Troop Positions - Battle of the Big Blue, October 23, 1864**Union Troops (under the command of General Alfred S. Pleasanton)**

- U1 2nd Missouri Light Artillery Battery (Three 3-inch Ordnance rifles)
- U2 1st Brigade (1st, 4th, 7th Missouri Militia Cavalry, plus detachment of 1st Iowa Cavalry) - Colonel John F. Philips
- U3 3rd Battalion of 4th Iowa Cavalry - Captain Edward Dee
- U4 4th Iowa Cavalry (1st and 2nd Battalions), 3rd Iowa Cavalry, and 10th Missouri Cavalry
- U5 3rd Brigade - General John B. Sanborn (followed initial assault on ford)

Confederate Troops (under the command of General John S. Marmaduke)

- C1 Advanced (skirmish) line
 - C2 Main Confederate troop line (3rd, 4th, 7th, 8th, 10th, 14th Missouri Cavalry, Freeman's Brigade)
 - C3 Hynson's Texas Battery (4 guns)
-

Legend for Figure 7.3



Figure 7.3 Approximate Troop Positions on October 23, 1864, During (Second) Battle of the Big Blue. Shown on Kansas City, Missouri-Kansas (1991), USGS 7.5' Series Topographic Quadrangle (1:24,000 Scale).

Approaching Byram's Ford of the Big Blue by the morning of the 23rd, Brigadier General Egbert Brown was ordered to lead the Union Army's 1st Brigade in an assault on the crossing at dawn. After a considerable delay, Brown was arrested by Pleasonton and Colonel John F. Philips of the 7th Missouri State Militia Cavalry was placed in command (Monnett 1995:110-111). Philips was ordered to carry out the attack in concert with Colonel Edward F. Winslow's 4th Brigade. A battery of three 3-inch ordnance rifles of the 2nd Missouri Light Artillery was set up on the crest of the ridge east of the Big Blue, adjacent to the Byram's Ford Road (Monnett 1995:111).

Philips led a dismounted regiment to the river bank, supported by a part of Winslow's dismounted brigade, while the 3rd Battalion of the 4th Iowa Veteran Cavalry under Captain Edward Dee was sent to the right (north) to effect a crossing to the west bank (Scott 1893:321). As the Union troops were being deployed, the Confederate skirmish line commenced firing, and strategically positioned Confederate artillery swept the ford with deadly effect. Colonel Philips reported that the artillery barrage killed a number of horses and men in mid-river (Philips, in Davis et al. 1893:350). However, Captain Dee's cavalymen, advantageously armed with Spencer repeating carbines, succeeded in following a wooded ravine to the north of Byram's Ford and crossed the river through the present project area. Following the success of the 4th Iowa, Lieutenant Colonel Thomas T. Crittenden succeeded in leading his men across the ford, followed by Major George W. Kelly's 4th Missouri State Militia Cavalry; these troops were immediately engaged in fierce combat with the Confederate line (Philips, in Davis et al. 1893:350).

After storming the west bank of the Big Blue, Pleasonton's troops "were quickly moved in line across the open level fields bordering the river, to the foot of the position now occupied by the enemy" (Scott 1893:322). These "open level fields" are now occupied by the Byram's Ford Industrial Park. The Union advance across this expanse of relatively level terrain was hotly contested. Closely following in support of the 1st and 4th Brigades (led by Colonels Phillips and Winslow, respectively) across Byram's Ford was General John B. Sanborn's

3rd Brigade (Hinton 1865:171). In the rear of the Union line, Surgeon John W. Trader established a hasty "field hospital" or collection point for casualties on the west bank of the Big Blue near Byram's Ford. Trader noted that he "soon had the bank of the stream covered with them," but the Union ambulance train was moved up rapidly behind the advancing troops (Culmer 1952:330-331).

The dismounted cavalry continued their assault on Marmaduke's troops which had fallen back and now held the top of a bluff 0.5 mi west of the ford, fronted by precipitous rocks (Figure 7.4). Upon the elevated landform were Confederate troops from the 3rd, 4th, 7th, 8th, 10th, and 14th Missouri Cavalry, along with Freeman's Brigade (Monnett 1995:109). Further hindering the Union offensive was the effective fire from Hynson's Texas Battery on the right of the bluff-top Confederate line with four artillery pieces and the fire from numerous sharpshooters stationed in tree-tops and in two log cabins near the summit of the bluff near the north end of their line (Monnett 1995:112-113). After an unsuccessful attempt by Phillips's mounted brigade to charge the right (south) side of the Confederate position, the 4th Iowa, on the Union right, again achieved success. According to one participant,

The Fourth Iowa scrambled through the gorges and clambered up the rocks, re-formed hastily at the top, and dashed across the plateau with their biggest yell. They had learned that the best and safest charge is the quickest and boldest one. When they got near enough they added the ring of their Spencers to their charging cry; and Winslow had the satisfaction of seeing the enemy break and his own men disappear in the woods, closely following their advantage [Scott 1893:324].

The battle continued westward, after the Union troops succeeded in dislodging the Confederates from "Bloody Hill," and Marmaduke's men retreated to rejoin the main body of Price's army on the prairie south of Westport. The engagement of October 23 in the vicinity of Byram's Ford lasted for several hours, and when it was over, approximately 200 of General Pleasonton's troops had been killed or wounded (Monnett 1995:115; Hinton 1865:173). The Confederate loss is unknown. On the early morning of the 24th, General

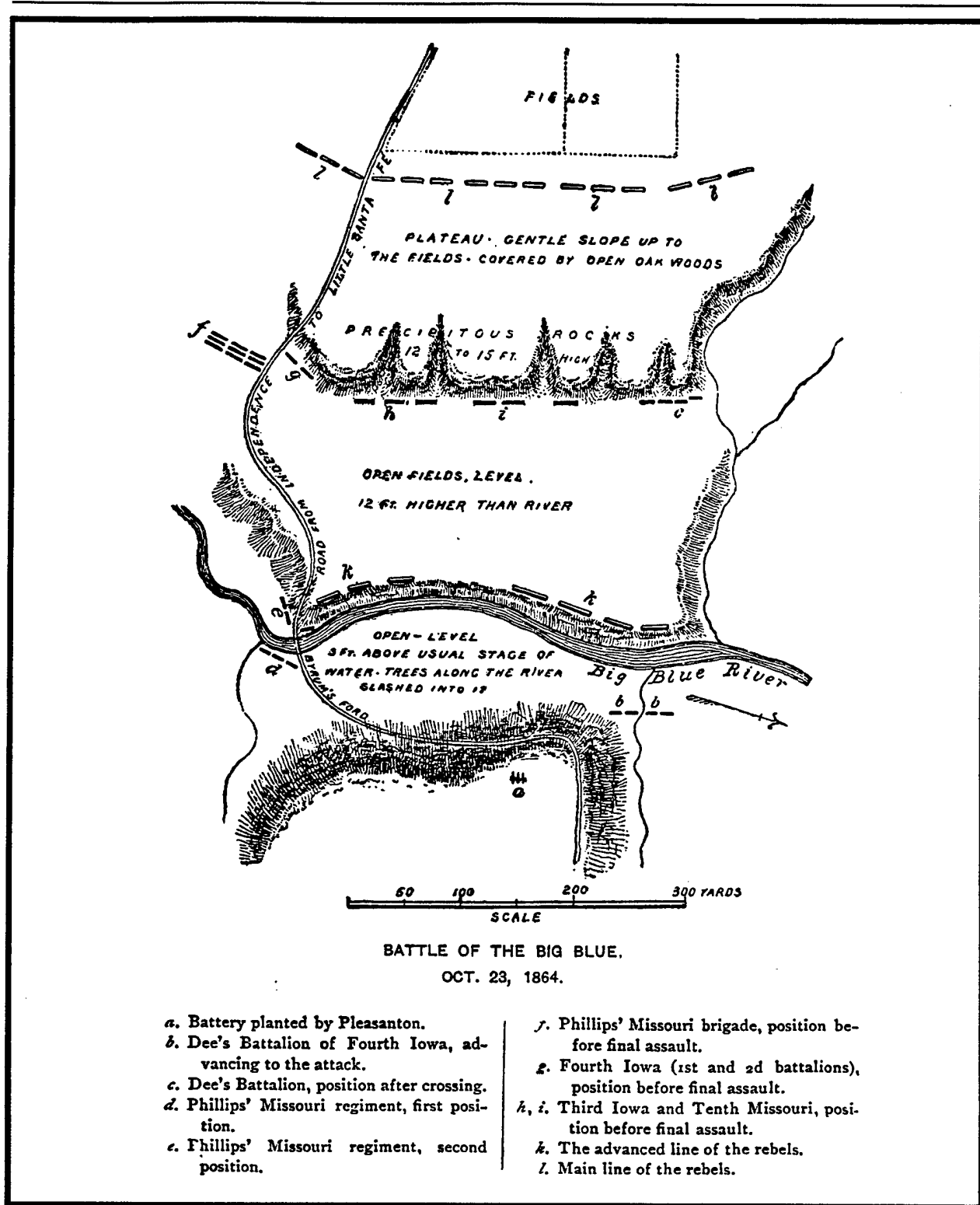


Figure 7.4 Contemporary Map of the Battle of the Big Blue (Second Day's Action, October 23, 1864), by William Forse Scott of the 4th Iowa Veteran Cavalry (Scott 1893).

Andrew J. Smith's command of 10,000 slower-moving infantry, consisting of five brigades from two divisions (designated the 16th Army Corps), arrived at Byram's Ford after the battle was over and presumably crossed the battlefield via the Byram's Ford Road on their way south towards Little Santa Fe (Monnett 1995:121-123).

7.3 POST-CIVIL WAR LAND USES

The terrace extending west of Byram's Ford was used as farmland from the second half of the nineteenth to the mid-twentieth century. For example, Jenkins (1906:Plate X) discusses Civil War munitions routinely unearthed on the west bank of the Big Blue due to plowing. The cultivation of land lying directly west of the ford continued for several more decades. One informant, who as a child moved to the area in 1926, stated that the site of Byram's Ford Industrial Park was for years utilized to raise corn and cantaloupe (Norman Mansell, personal communication, March 19, 1996).

Portions of Byram's Ford Road, which was a relatively important regional transportation route and Santa Fe Trail variant in the nineteenth century, remained in use well into the twentieth century, probably until construction of 63rd Street in the mid-1930s. The ford itself, however, appears to have fallen into disuse by the early twentieth century, as noted by Jenkins:

This point was the then widely-known Byram's Ford Crossing. Constantly in use at that day, on the main line of the road leading from Independence to the country south of Kansas City, it has since become unusable owing to shifts in the channel of the stream and is even almost unknown to many residents in that neighborhood, while the old roads that once led to it have many of them been fenced off and the ground around it cleared of this heavy timber and made into farms [Jenkins 1906:116].

Nevertheless, the road and river crossing must have been recognizable decades later and are clearly shown on a 1925 atlas of Kansas City (Figure 7.5). Increasing automobile traffic apparently necessitated improvements in the street system throughout Kansas City in the

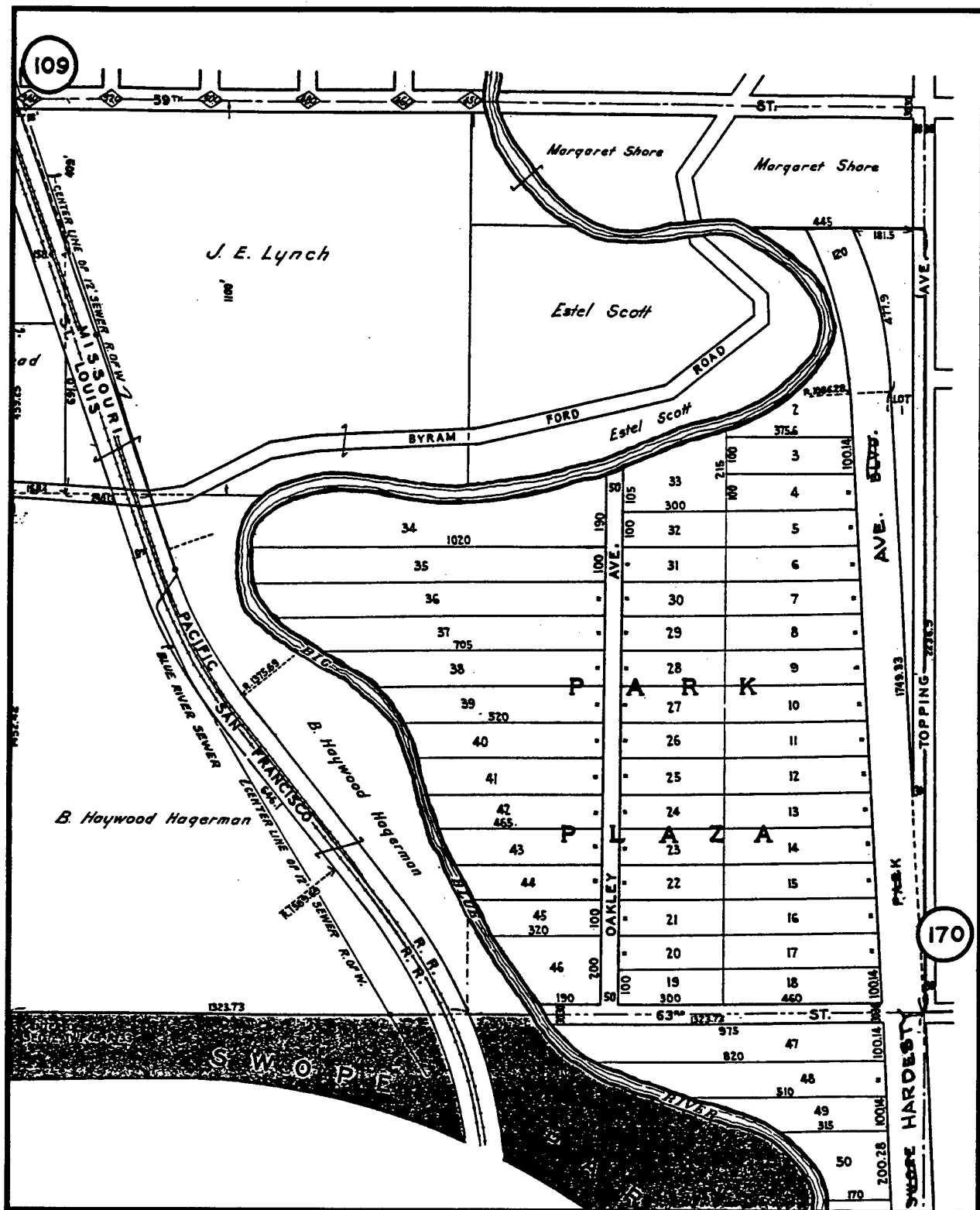


Figure 7.5 Map Showing 1925 Alignment of Byram's Ford Road (Tuttle-Ayers-Woodward Company 1925).

1920s and 1930s, and in the late-1930s, 63rd Street was extended eastward along the northern limit of Swope Park. At the same time, a bridge was constructed over the Big Blue River, and a portion of Byram's Ford Road (and the ford itself) was relegated to further obscurity. As residential development occurred in this part of the expanding urban landscape of Kansas City, other portions of the road to the east and west of the ford were paved and in some places straightened. The trace of Byram's Ford Road through the present project area was visible for a number of years after its abandonment (Figure 7.6). Portions of the old Byram's Ford Road are still in use today; however, that portion directly west of the ford, whose trajectory passed through the Byram's Ford Industrial Park, has virtually been erased by the combination of disuse, agriculture, and modern development.

Residential development in the early twentieth century destroyed a portion of the battlefield adjacent to the present project area. The Cunningham Plaza subdivision was platted in 1910 by Bertha E. Hart and was situated directly north of the modern industrial park between 58th and 59th Streets (Hart 1910). This subdivision contained a series of streets aligned north/south (Brighton, Quincy, Denver, Colorado, and Cindy Avenues [Cindy Avenue was originally called Hardesty Avenue]), and while all of the houses in this development have been removed, the street pattern remains. The area south of Cunningham Plaza, north of 63rd Street, and west of the Big Blue River continued to be used as farmland until the late 1950s. In 1956, Alexander J. Barket platted the Byram Ford Park Addition, which extended an earlier industrial park eastward (Barket 1956). The Byram Ford Park Addition established the industrial park's present street pattern, including Manchester Trafficway, 60th Street, and a southern extension of Colorado Avenue. At least six separate light industrial facilities were constructed on the site by June 1957 (Duggan 1990). The Missouri Pacific/St. Louis and San Francisco Railroad alignment which traverses the battlefield along the western edge of the Byram Ford Park Addition was constructed sometime prior to 1927 (Deatherage 1927).

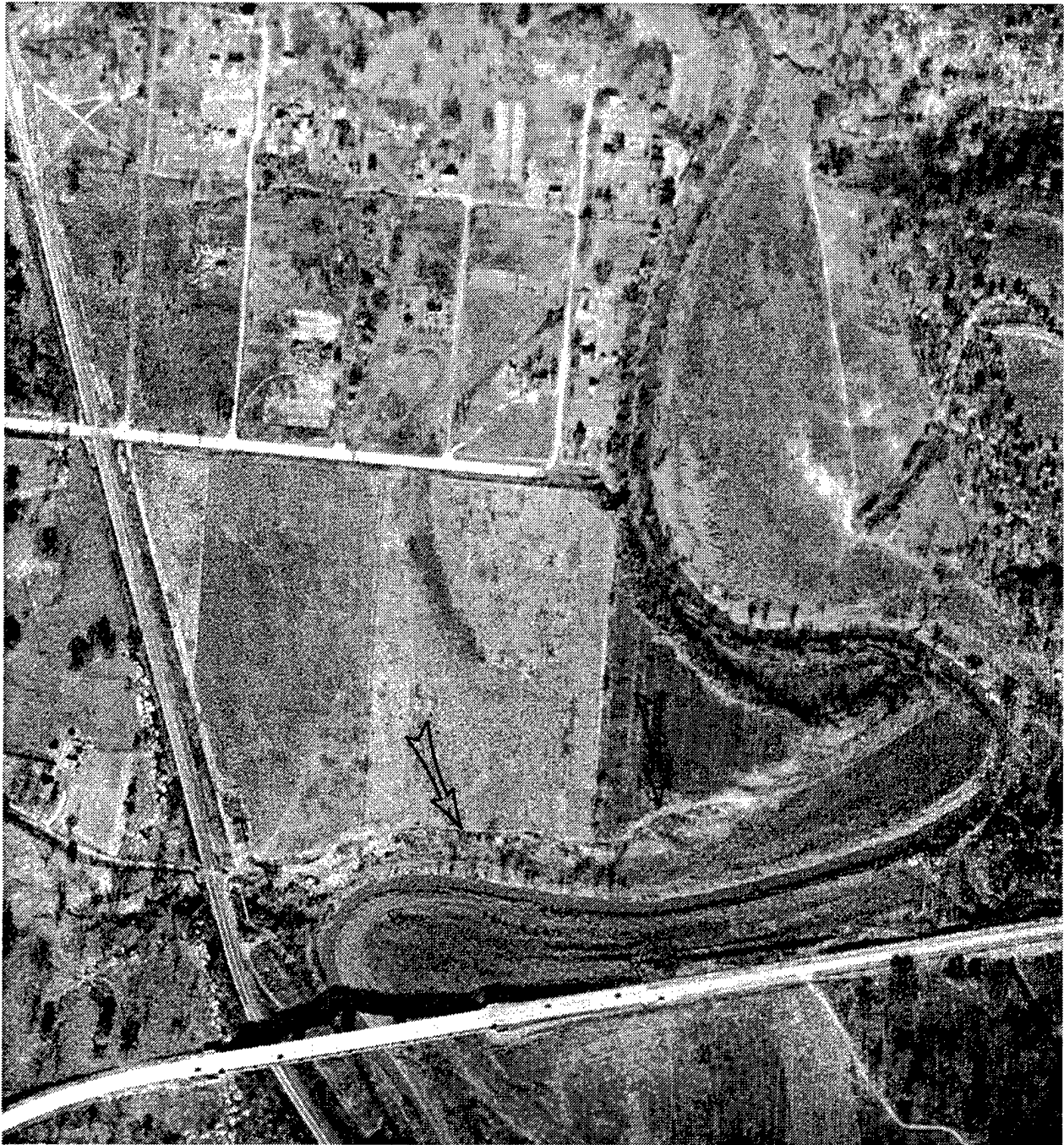


Figure 7.6 Portion of 1941 Aerial Photograph of the Byram's Ford Vicinity Showing the Trace of the Old Byram's Ford Road West of the Big Blue River.

8.0 SURVEY RESULTS

The field inventory was completed on March 16 and 17, 1996. Survey coverage was variable depending on the extent of natural and man-made disturbance of specific portions of the project area (Figure 8.1). Only one relatively intact portion of the battlefield was determined to occur within the project area, which was designated Locality A of Site 23JA507 (the Big Blue Battlefield). This locality is discussed in Section 8.1. Subsurface testing for evidence of Byram's Ford Road through a portion of the project area produced negative results; these results are discussed in Section 8.2.

The fieldwork commenced on the west side of the Big Blue River at the southern end of the project area in an undeveloped field south of 60th Street and east of the Dupont Chemical Company building (Figure 8.2). This field is well-covered with grasses, and several isolated young trees grow within the parcel. The southern edge of the parcel, along the river bank, is marked by a dense stand of trees. Systematic metal detecting and visual inspection was conducted from south to north across this level parcel and resulted in the discovery of two definite battle-related artifacts and several potential battle-related artifacts, all buried beneath the surface and discovered with the aid of metal detectors. The presence of military artifacts and geomorphological evidence of a plowzone as opposed to fill indicated that this portion of the battlefield is relatively intact. A large portion of this field, not including its northern end, was therefore designated as Locality A of the historic Big Blue Battlefield (Site 23JA507). The northern end of this field was disturbed by an extensive but shallow linear depression (possible borrow pit), as well as the bed of a narrow gauge railroad spur line closely paralleling 60th Street. The extreme southern edge of this field at the edge of the steeply sloped river bank was also excluded, since it was lined with makeshift concrete riprap levee (up to a meter in height).

The fieldwork continued into the field directly north of the one just described, on the north side of 60th Street, bounded on the east by a long brick industrial building and extending

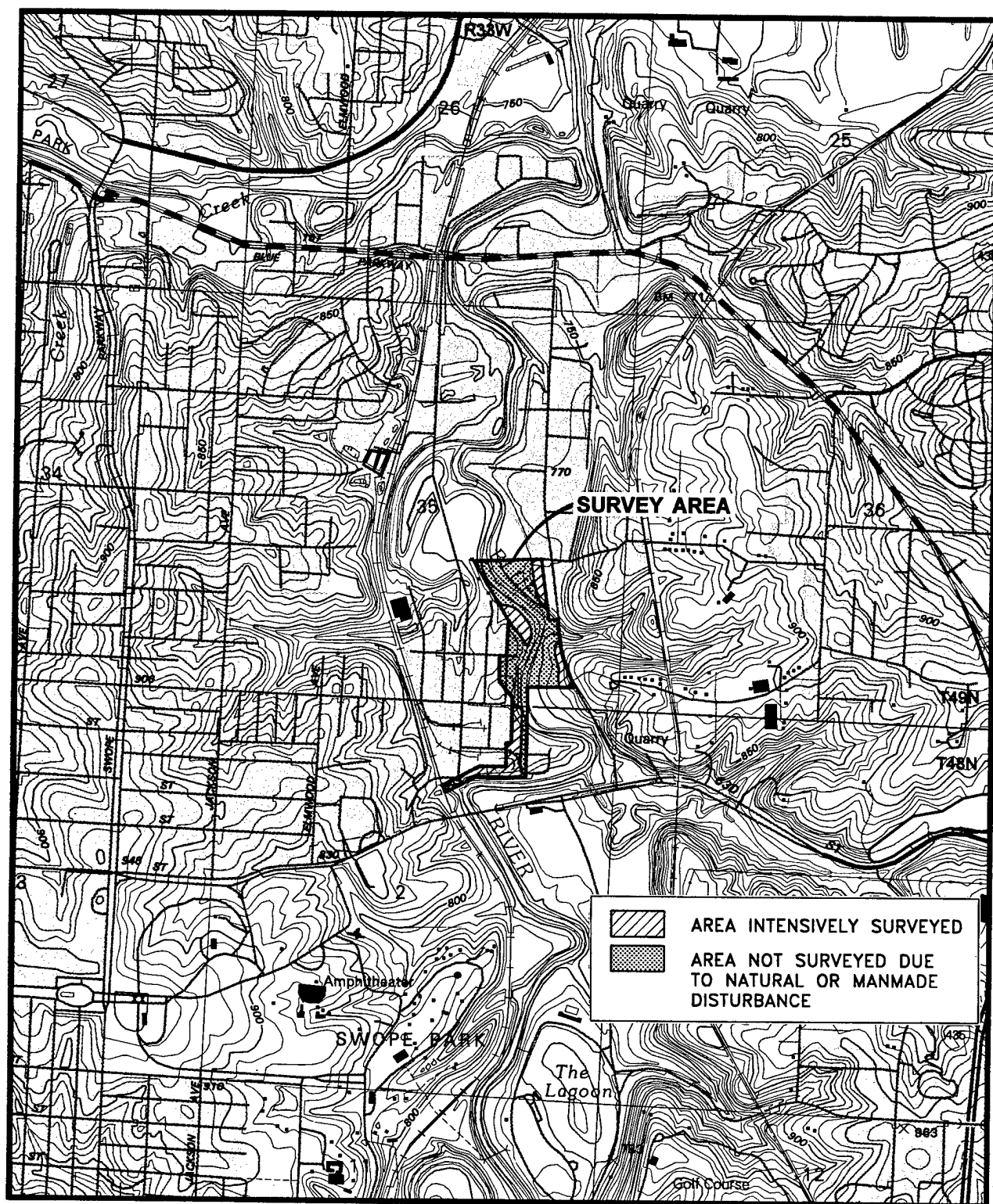


Figure 8.1 Map of Project Area Showing Levels of Archaeological Survey Coverage.



Figure 8.2 Metal Detector Survey of Vacant Parcel at South End of Survey Area, East of Dupont Chemical Company Building. View Looking Northeast.

north to 59th Street (Figures 8.3 and 8.4). The eastern edge of the O'Brien Partition Company building near 59th Street was in line with the western limit of the survey area through this grassy, virtually level field. While this field appeared very similar to the field south of 60th Street in which battle-related artifacts were found, metal detectors found that it contained copious amounts of seemingly modern debris in a fill matrix. No Civil War-period materials were identified within this area, which was judged to be highly disturbed, probably from filling and leveling during construction of the industrial park.

Another area systematically swept by metal detectors at the south end of the survey area consisted of a manicured grass lawn extending in a narrow strip close to the steep north bank of the Big Blue River (which follows an east/west course in this area), from the south side of the Dupont Chemical Company building, west-southwest towards the Stratco building (Figure 8.5). This lawn area is relatively level, with several planted trees. The river bank



Figure 8.3 Portion of Battlefield Survey Area North of 60th Street in Byram's Ford Industrial Park. View Looking North.



Figure 8.4 Metal Detector Survey of Area West of Big Blue River and North of 60th Street in Byram's Ford Industrial Park. View Looking Southwest.



Figure 8.5 Portion of Survey Area Extending Southwest of Dupont Chemical Company Building on West Side of Big Blue River. View Looking West-southwest.

bordering this parcel is marked by woody brush with cottonwoods established along the bank slope below. At the west end of the parcel is a substantial brick monument placed by the Monnett Fund of the CWRTKC, which provides bronze signage and a large bronze map interpreting the battles which occurred near Byram's Ford (Figure 8.6). Metal detector targets proved to be spurious, as only modern debris in a fill matrix was unearthed. This area was determined to be highly disturbed as a result of the construction of the nearby industrial park buildings.

Almost all remaining portions of the project area on the west side of the Big Blue River, to the north of 59th Street, were obviously highly disturbed as a result of twentieth-century development. A small area north of 59th Street and west of Cindy Avenue, within the abandoned Cunningham Plaza subdivision, was heavily covered with dumped trash and debris, as was another portion of the abandoned subdivision on the east side of Cindy



Figure 8.6 Monnett Battle of Westport Fund Interpretive Marker for the Battles of the Big Blue, on Lawn South of Dupont Chemical Company Building.

Avenue containing the remains of at least two twentieth-century dwellings (Figures 8.7 and 8.8). Metal detecting and visual survey were deemed futile in these areas, and they were omitted from systematic inventory. Further north, just beyond the northern terminus of Cindy Avenue, is a cleared area which is used for storage of large truck trailers (Figure 8.9). North of this trailer parking area, the high terrace has been extended towards the river by filling, and to the northeast of this artificial portion of the high terrace is a wide, lower terrace, adjoining the channel of the Big Blue River (Figure 8.10). A systematic visual and metal detector survey of this low terrace was conducted but terminated before completion after it became evident that periodic flooding had reworked the terrace soils (Figure 8.11). Supporting this determination were a number of deeply buried modern aluminum soft drink cans (ca. 1 ft deep) and the widespread flattened appearance of the terrace-top vegetation, evidently due to the most recent flood episode. It was therefore concluded that this area did not represent an intact portion of the Big Blue Battlefield.



Figure 8.7 Trash-strewn Portion of Survey Area Located on West Side of Cindy Avenue in Abandoned Cunningham Plaza Subdivision, Looking Northwest.



Figure 8.8 Disturbed Portion of Survey Area East of Cindy Avenue and North of 59th Street Containing Abandoned Homesites. View Looking Northeast.



Figure 8.9 Truck Trailer Parking Area Beyond Northern Terminus of Cindy Avenue in Survey Area on West Side of Big Blue River. View Looking Northeast.



Figure 8.10 Survey in Progress on Low Stream Terrace on West Side of Big Blue River near Northern Limit of Survey Area. View Looking Southeast.



Figure 8.11 Metal Detector Survey of Stream Terrace West of Big Blue River Northeast of Abandoned Cunningham Plaza Subdivision. View Looking Southeast.

Only a relatively small portion of the project area east of the Big Blue River appeared to have enough environmental integrity to warrant systematic survey coverage. Metal detectors and visual surveys were employed only on the relict upper terrace and higher slopes of the floodplain, generally covered with a dense to moderately dense forest with very sparse understory vegetation (Figures 8.12-8.14). The lower slopes and stream terrace bordering the east bank of the Big Blue exhibited abundant signs of recurrent flooding, including deeply buried tree trunks, flattened vegetation with preserved flow patterns, and the deposition of natural and man-made debris in the branches of trees well above the present ground surface. Other nonnatural disturbances evident in the east bank portion of the project area included cascading fill from construction of Hardesty Avenue; a buried sewer line following the alignment of Hardesty Avenue on the upper terrace west of the roadway; and modification of the drainage channel from the major ravine evident on the east side of Hardesty Avenue (through which Captain Dee's battalion of the 4th Iowa Cavalry passed



Figure 8.12 View of Project Area East of Big Blue River, on West Side of Hardesty Avenue. View Looking North.



Figure 8.13 View of Forested Survey Area Between Hardesty Avenue and East Bank of Big Blue River. Higher Terrace in Foreground, and Lower Flood-disturbed Terrace in Background. View Looking West-southwest.



Figure 8.14 Metal Detector Survey of Forested Area Between Hardesty Avenue and East Bank of Big Blue River.

to ford the river on October 23, 1864). A concrete culvert structure installed under Hardesty Avenue where the ravine would have crossed has resulted in an unnaturally eroded drainage channel and deposition on its banks (Figure 8.15). Finally, copious amounts of modern trash obscure portions of the ground surface, including along the margin of Hardesty Avenue (Figure 8.16) and behind an inhabited row of dwellings along Hardesty Avenue near the north end of the project area. No military artifacts were found in the terrace and slope areas east of the Big Blue River, and it is judged that periodic flooding is largely responsible for erasure of the archaeological record of the battlefield in this area. This conclusion is consistent with the geomorphological observations and assessment of cultural resource potential made by Smith (n.d.) and Nickens (1992).



Figure 8.15 Drainage Leading West Towards Big Blue River from Ravine North of Byram's Ford Followed by 4th Iowa Cavalry on October 23, 1864, During Union Attack on Marmaduke's Force Holding West Bank of Big Blue River. View Looking West.



Figure 8.16 Trash Deposited Along the West Side of Hardesty Avenue in the Project Area East of the Big Blue River.

8.1 NEWLY RECORDED CULTURAL RESOURCES

The only cultural resource identified during the survey was one relatively preserved portion of the battlefield on the west side of the Big Blue River, within the Byram's Ford Industrial Park. The Big Blue Battlefield had not yet been assigned a state site number; however, portions of the battlefield centered around the ford (east of the present project area) were previously listed on the National Register of Historic Places as the Byram's Ford Historic District. As a result of this investigation, the Big Blue Battlefield was newly designated as Site 23JA507, and the portion documented in this project is designated arbitrarily as Locality A (see Figure 1.1). However, because the Big Blue Battlefield was a dynamic event which was closely linked to the Battle of Westport, fought over a large area west and southwest of Byram's Ford, boundaries for the entire battlefield site were not defined. The lack of a clear boundary was also acknowledged by earlier battlefield investigators Miller and Walsh (1995:i). The portion of the Big Blue Battlefield documented by the survey is discussed below.

Site 23JA507, Locality A

Legal Location: NESEWNNE of Section 2, T48N, R33W

Site Type: Battlefield

Site Size: 180 ft (55 m) N-S x 320 ft (88 m) E-W; 1.32 acres

Site Description: One relatively intact portion of the Big Blue Battlefield was recorded near the south end of the survey area, west of the Big Blue River in the Byram's Ford Industrial Park. This fractional portion of the battlefield is designated as Site 23JA507, Locality A (Figure 8.17). The locality is a roughly rectangular area situated in an undeveloped, grass-covered field bounded on the north and east by 60th Street, on the south by the bank of the Big Blue River, and on the west by the Dupont Chemical Company building (Figures 8.18 and 8.19). The locality measures approximately 180 ft (55 m) N-S by 320 ft

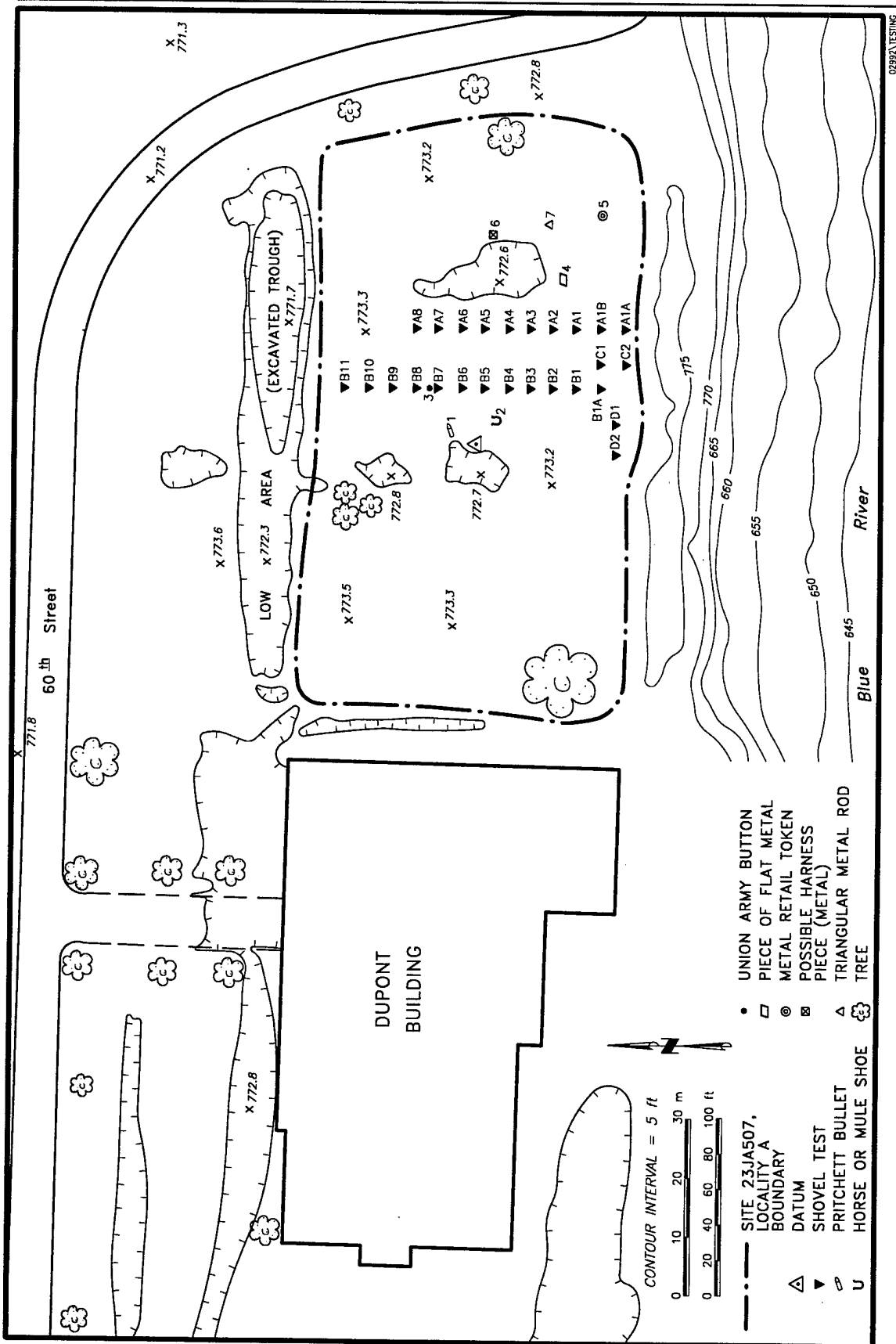


Figure 8.17 Plan Map of Site 23JA507, Locality A, also Showing Locations of Shovel Tests Employed in Search for Stratigraphic Evidence of Byram's Ford Road.



Figure 8.18 Survey in Progress Within Site 23JA507, Locality A. View Looking Southwest.



Figure 8.19 Metal Detector Operators Sweeping Ground in Site 23JA507, Locality A. View Looking West Towards Dupont Chemical Company Building.

(88 m) E-W and encompasses an area of approximately 1.32 acres. According to CWRTKC representative Orvis Fitts, the parcel is currently owned by Commerce Bank.

The locality appears to have only been disturbed by cultivation (plowing) since the Civil War, based upon the testimony of informants and the results of subsurface testing (see Section 8.2, below). Two definite military artifacts were recovered from this site during the survey, as well as several other metallic artifacts which may potentially have originated from the military engagements of October 22 and/or 23, 1864. All of the artifacts recovered from this site were found buried no more than 8 inches below the ground surface, and past plowing undoubtedly has caused these artifacts to be vertically displaced from their original depositional context. The spatial distribution of these artifacts are shown on Figure 8.20.

A solitary specimen of Civil War small arms ammunition recovered from the site is identified as a fired .577 caliber "Pritchett" bullet, of the type manufactured and employed by the Confederacy for use in muzzle-loading British 1858 pattern Enfield rifled muskets (Figure 8.20a). This bullet was located as a metal detector signal and was unearthed from a depth of approximately 7.5-8.0 inches below the ground surface. The bullet is just over 1 inch (26 mm) long and, although slightly deformed from impact, has a diameter of from 0.5785 to 0.5825 inch. The specifications for an unfired Pritchett bullet include a diameter of 0.568 inch and a weight of 530 grains (34.34 grams); it was fired with a 70 grain powder charge (Fuller and Steuart 1944:224). The specimen recovered from Locality A of Site 23JA507 is lighter, weighing only 445 grains (28.8 grams). The bullet is cylindrical and smooth-sided, with a conical tip and a hollow base; the latter attribute was designed to expand outward when the charge behind it was fired such that it filled the rifled bore of the gun. The Pritchett round was incorporated into a paper cartridge which also contained grease to lubricate the barrel and prevent excessive lead fouling (Edwards 1962:19). The Pritchett bullet is a diagnostic Confederate artifact for a weapon used by both sides; the Confederates simply replicated the British-designed round, whereas Enfield rifles used by Union troops were loaded with the standard government issue grooved .58 caliber round (Coates and Thomas 1990:19).

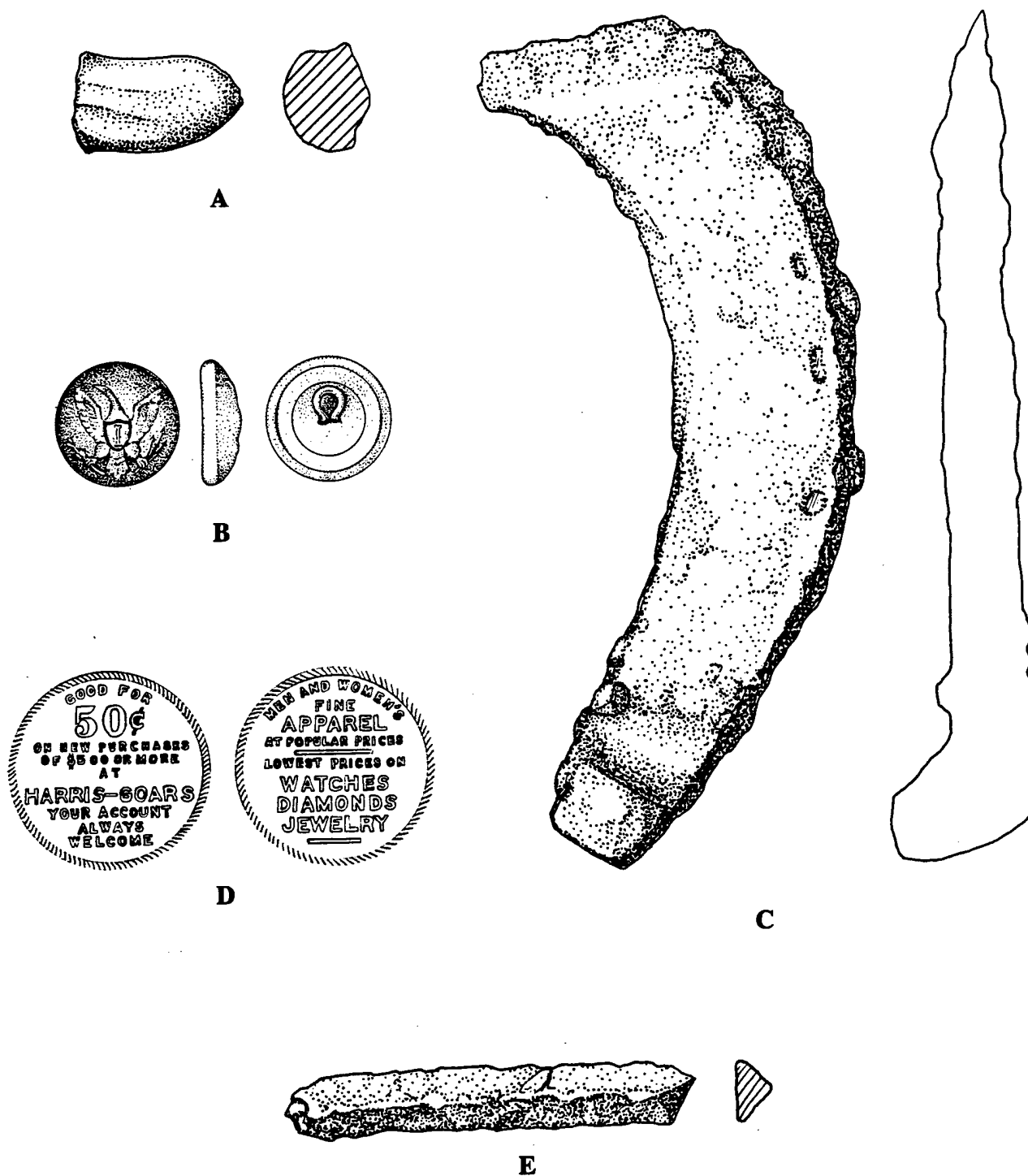


Figure 8.20 Artifacts Recovered from Site 23JA507, Locality A. A) Pritchett Bullet, B) Union Army Infantry Officer's Button, C) Fragmentary Horseshoe, D) Twentieth-century Token, E) Triangular Iron Rod (Actual Size).

The origin of this bullet is impossible to determine with certainty. One possible explanation is that it was fired westward on October 22, 1864, during the first day's battle when the Confederates under General Shelby successfully assaulted Byram's Ford and forced the Union defenders to retreat to the west. Alternatively, the bullet may have been fired by Confederate troops on the retreating skirmish line or from the top of "Bloody Hill" eastward towards General Pleasonton's troops who on October 23 fought their way across the Big Blue River and in turn forced the Confederate army to retreat westward from Byram's Ford.

A Union Army uniform button was also recovered from a buried context within Locality A of Site 23JA507 (Figure 8.20b). This button measures 0.78 inches (19.75 mm) in diameter and is slightly dented in the center. It is a standard military type yellow metal "eagle" button made of two pieces, including a dome-shaped front piece with an embossed device, the edges of which are folded over the back piece to which a wire loop shank is fastened (brazed on). This type of two-piece button was invented by Benjamin Sanders of Birmingham England around 1813 (Albert 1969:7). The specimen recovered from this site is an Infantry officer's button, identified by the presence of an embossed letter "I" in the center of a shield device over a spread-winged eagle holding three arrows in one talon and an olive branch in the other; after 1854, this device was only worn by officers (Albert 1969:34; Todd 1974:108). This specimen lacks a manufacturer's mark or "backmark," which would have been stamped on the back piece.

This button is a somewhat unexpected find from the Big Blue Battlefield, since the actions on October 22 and 23, 1864, were fought entirely by cavalry units. Two possible explanations can be posited, however. The first is that the button may have been lost by a Union infantry officer associated with the command of General A.J. Smith. Smith's large force of 10,000 infantry reportedly arrived at Byram's Ford not long after General Pleasonton's troops had won the Battle of the Big Blue on October 23 (Monnett 1995:121). Alternatively, it is possible that the infantry button was worn by a cavalryman as a substitute for a cavalry or General Service button; this scenario is based on the fact that the supply

of materiel to federal troops in the distant Trans-Mississippi department was probably less reliable than in the eastern theater.

Other artifacts recovered from Site 23JA507, Locality A, include a fragmentary horseshoe (Figure 8.20c), a fragmentary piece of flat strap iron (4.5 inches [11 cm] long, 0.9 inch [2.5 cm] wide), a modern alloy token (Figure 8.20d), half of a flared cylindrical metal piece with a rolled rim--possibly from a hames or a singletree, and a 2.6 inches (6.5 cm) long fragment of a rusted iron rod which is triangular in cross section (Figure 8.20e). The latter artifact does not appear to represent a fragment of socket bayonet such as those used with the Model 1855 U.S. rifled musket or the Model 1853 British Enfield (Webster 1964:37-38) and is probably from a triangular file. The horseshoe found here is probably not a cavalry type and may have originated from post-Civil War agricultural activity, or it may be associated with passage of Price's lengthy wagon train over Byram's Ford Road during the evening of October 22, 1864.

Additional Civil War-period artifacts, including a variety of bullets and case shot (from artillery), have reportedly been found within Locality A of Site 23JA507 following this survey by an avocational metal detector operator (Rick Graff, personal communication, March 20 and March 27, 1996). These additional finds (eight bullets and two case shot) enhance the interpretation of this part of the project area as a relatively undisturbed (except by metal detecting) portion of the Big Blue Battlefield. The only disturbances evident here are plowing over an undetermined number of years, creating a plowzone in the upper soil horizon, and metal detecting, which has removed at least a portion of the archaeological record of the battle(s). The topography of the locality closely resembles its 1864 appearance; however, numerous visual intrusions by buildings and roads in the Byram's Ford Industrial Park detract from the historic setting.

Based on the number of bullets recently collected from the locality with known proveniences (9 per 1.32 acres), the small arms ammunition density for the locality is 6.8 bullets per acre.

This seems a very low figure, given the parcel's position close to the heavily contested ford and including a portion of the Byram's Ford Road.

Site Significance/National Register of Historic Places (NRHP) Eligibility: Site 23JA507, the Big Blue Battlefield, is judged to be historically significant and is recommended as eligible for the NRHP. The Battle(s) of the Big Blue fought on October 22 and 23, 1864, were important military engagements which played a key role in the larger Battle of Westport, which turned the tide of General Sterling Price's bold raid into Missouri late in the Civil War. The battles in this vicinity were components of what was undoubtedly the largest battle of the Civil War west of the Mississippi River and were the result of the great strategic importance of the Byram's Ford crossing of the Big Blue River. The actions fought on terrain around and extending west of the ford directly influenced the outcome of the Battle of Westport and the ultimate fate of the Price Raid and effectively ended Confederate aspirations for Missouri. Thus, like the nearby Byram's Ford Historic District, the Big Blue Battlefield is considered representative of significant historical events and renders the site eligible under Criterion A.

Locality A of Site 23JA507, a 1.32-acre parcel which retains a moderate degree of physical integrity, is recommended as contributing to the overall NRHP eligibility of the site, even though it presently exhibits relatively poor integrity of setting due to nearby buildings and streets in the Byram's Ford Industrial Park. Despite modern intrusions, the locality still has topographic integrity and may also still contain additional subsurface archaeological evidence of the battle(s). The site, and Locality A, are also recommended as potentially eligible under Criterion D. This parcel is recommended for addition to the NRHP listed Byram's Ford Historic District.

8.2 SUBSURFACE TESTING FOR BYRAM'S FORD ROAD

A total of 26 shovel tests was excavated to search for subsurface evidence of Byram's Ford Road and to assess the stratigraphic integrity of the area through which the road historically

passed (see Figure 8.17). The placement of these test excavations was based upon the known alignment of Byram's Ford Road as shown on early aerial photographs and maps and were laid out in two parallel lines near the southern end of the survey area, in the level undeveloped field situated south and west of 60th Street and east of the Dupont Chemical Company building (within Locality A of Site 23JA507) (Figure 8.21). No indications of a traffic-compacted or graveled surface or buried roadbed were discerned, and the test excavations verified that the soil in this vicinity of the industrial park represents naturally occurring alluvial sediments rather than imported fill. The tests also revealed that the upper soil component or horizon may have been churned by periodic plowing, as was suggested by previous geomorphological investigation (Smith n.d.) but that the plowzone was confined to the upper 4-6 inches (10-15 cm). The soils in this portion of the survey area are a dark brown clayey loam ranging in color from 7.5 YR 3/2 to 5 YR 4/4. Some buried gravel ranging in size from 0.8 inch (2 cm) in diameter to larger angular rocks was encountered



Figure 8.21 Excavation of Shovel Tests Within Site 23JA507, Locality A, Searching for Evidence of Byram's Ford Road. View Looking West.

at depths of from 2-6 inches (5-15 cm) below the present ground surface; however, no linear pattern of gravel as expected for an improved roadway was observed. No buried artifacts, prehistoric or historic, were unearthed as a result of the subsurface testing.

9.0 DISCUSSION OF SURVEY RESULTS

The results of the archaeological inventory of the BRCMP survey area provide useful data to satisfy the research objectives as presented in Section 4.0, as well as specific research problems identified in the research design (Marmor 1996). The principal result derived from the survey was verification that a very large proportion of the survey area is in fact disturbed by natural processes or artificial modifications to the historic landscape. The other significant result was the identification of a small parcel within the survey area containing a relatively intact portion of the historic battlefield (Site 23JA507, Locality A). Each research question presented in the research design is discussed below in light of the results from the survey.

The research questions are linked to two broad research domains. One domain pertains to the reliability of the archaeological evidence and is addressed by research questions 1 and 2. The other relevant domain is the chronology and military aspects of this specific historical event, addressed by research question 3 and more specific questions 3a through 3e.

1. *Is the archaeological context of the study area sufficiently intact to permit analysis of the historical events (i.e., the Battle of the Big Blue) based on material evidence? What post-depositional processes have affected the integrity and visibility of the archaeological record? How significant are post-Civil War impacts to the land within the study area, including avocational collecting of military relics?*

The present survey found that most of the survey area has been subjected to widespread stratigraphic disturbance from natural processes such as periodic flooding of the Big Blue River, and artificial processes such as construction of the Cunningham Plaza residential subdivision and Byram's Ford Industrial Park. Evidence of substantial impacts by avocational relic collectors to the Big Blue Battlefield occurring over a long period of time, including areas within the present

survey area, was documented, and it appears that the archaeological record of the battle has been diminished significantly at least in some areas. Relic collecting has undoubtedly skewed the archaeological record of the battle as has been documented in other Civil War battlefields including Mine Creek (Lees 1996). One of the biggest problems encountered was determining exactly where battlefield relics were collected by individuals who did not record provenience information.

The archaeological context of the Civil War battle(s) appears to be relatively intact in one small (1.32-acre) area comprising approximately 4.5% of the total project area. Even this small battlefield area has been disturbed to some extent by agricultural plowing, possibly other surface disturbance, and the apparent removal of a significant quantity of buried military artifacts by relic collectors equipped with metal detectors. Nevertheless, this small vestige of the battlefield was situated where the fighting on either or both days (October 22 and 23) in 1864 was very severe, and despite the above-described disturbances, the archaeological context of this portion of the battlefield is sufficiently intact to permit analysis of at least some aspects of the historical events, such as the types of weapons present. As has been noted by previous investigators who have employed metal detectors, inherent technological limitations and key variables which affect their reliability, such as the size and depth of metallic items, indicate that not all buried metallic artifacts are likely to be found during even a systematic survey (Lees 1994:49). Therefore, it appears likely that additional buried artifacts associated with the Battle(s) of the Big Blue may still remain in Locality A of Site 23JA507.

2. *What degree of confidence can be placed on the results of the survey in light of natural limitations such as vegetation cover and the relative reliability of remote sensing techniques?*

The areas excluded from survey because of natural and/or man-made disturbance are confidently determined to lack archaeological evidence of the Battle(s) of the Big Blue. For the few areas which had apparent stratigraphic or topographic integrity and were surveyed by visual and metal detector survey, the vegetation cover, not surprisingly, was generally dense enough to almost completely obscure the ground surface, and the only battle-related remains which might have been found by visual inspection were features such as defensive earthworks. The results from metal detecting were sufficient to prove the archaeological potential of one portion of the survey area and to prove the destruction of the archaeological record of the Civil War battle in other portions. However, it was apparent that there was great variability in the experience, skill level, and equipment used by the volunteer metal detector operators which may have yielded less than optimal results.

3. *Does the archaeological record verify or refute the historical (written) record of the events which transpired here? Specific research questions may be postulated based on spatial distribution of battle-related artifacts and features:*

3a. *Is there evidence of federal field fortifications constructed by General Curtis's troops on the west side of the Big Blue River to resist General Price's advancing army?*

No evidence of field fortifications were found in the survey area. The extensive disturbance of as much as 95.5% of the survey area probably explains the absence of such features.

3b. *Is there evidence of the passage of Captain Dee's 3rd Battalion of the 4th Iowa Cavalry across the Big Blue River within the study area to the north of Byram's Ford as indicated by the account and map of a soldier eyewitness (Scott 1893)?*

The portion of the ravine followed by Dee's troops on the west side of Hardesty Avenue has been severely altered by floodplain processes on the lower stream terrace; by topographic alterations caused by construction of Hardesty Avenue across the mouth of the ravine; and by associated modification of natural drainage through the ravine via a culvert structure. No evidence of the westward movement of the 4th Iowa Cavalry (e.g., Spencer carbine bullets or cartridge cases) was located during the survey.

3c. *Is there evidence of firing across the river north of Byram's Ford and can the troop identities and positions be determined?*

Only one bullet was found during the survey in a buried context, and its trajectory could not be determined.

3d. *Is there evidence of a field hospital reportedly established on the west bank of Byram's Ford during the battle? (Culmer 1952, as noted in Miller and Walsh 1995:93).*

No evidence of a field hospital was found, and careful scrutiny of the historical record, including the recollections of Surgeon John W. Trader (Culmer 1952) reveal that what was originally referred to as a "field hospital" used on the 23rd of October, 1864 (Miller and Walsh 1995:93), was in reality little more than a very short duration collection point for casualties. Based on this revised interpretation, there would probably be little to archaeologically distinguish such an ephemeral "hospital."

- 3e. *What does the archaeological record in the study area indicate about the armaments employed by the opposing sides and what are the implications bearing on the outcome of the conflict? Both historical and archaeological studies indicate that there are archaeologically verifiable differences in armaments employed by the Union and Confederate troops, particularly the distinction between breech-loading, repeating rifles used by the Union troops and the muzzle-loading rifled muskets employed by Price's army (Lees 1994:50; Castel 1968:230). Captain Dee's cavalry brigade, which crossed the Big Blue River through the current project area, was reportedly armed with breech-loading Spencer carbines (Scott 1893:324).***

Only one artifact was recovered during the investigation which applies to this research question--a .577 caliber Confederate "Pritchett" bullet. The presence of this bullet on the Big Blue Battlefield does indicate that muzzle-loading Enfield rifles were in use by the Confederate troops, although how prevalent these weapons were at the battles near Byram's Ford in comparison with other types of Confederate small arms is not known (see Appendix A). More recent finds of small arms ammunition from the same area have not been analyzed, but based on identification of bullet types provided by the individual who discovered them, a diverse array of armaments appears to be represented.

Two objectives proposed in the research design which were not articulated as research problems can also be addressed. The first involved the goal of determining whether or not a portion of Byram's Ford Road believed to pass through a portion of the survey area could be discerned. The survey found no visible surface indications of the road, and subsurface testing also yielded negative results. The road was visible as recently as 1941 from the air (see Figure 7.6). Agricultural use of the land, possibly other mechanical disturbance to the surface of this portion of the project area, and possibly natural erosional processes have combined to erase the road trace from the landscape within the project area.

The second project objective not covered in the research questions involved comparison of the archaeological data collected from the BRCMP survey area with archaeological data from the Mine Creek (Kansas) Battlefield. The Battle of Mine Creek occurred on October 25, 1864, during General Price's retreat from Westport and, therefore, involved essentially the same combatants. The Mine Creek data published to date (Lees 1994) involved analysis of the spatial patterning of Union and Confederate small arms ammunition to determine troop positions with which to compare to the historical record. The paucity of small arms ammunition found by the Big Blue Battlefield survey precluded the comparative study proposed in the research design; however, the one bullet recovered, a Confederate "Pritchett" round from a muzzle-loading Enfield rifled musket, was consistent with Lees's assumption that Union and Confederate small arms could be distinguished by whether they were muzzle-loaded weapons (Confederate) or more sophisticated breech-loaders (Union) (Lees 1994:50).

10.0 PROJECT IMPACTS ON CULTURAL RESOURCES

The proposed levee to be constructed in conjunction with the BRCMP will traverse the southern portion of Site 23JA507, Locality A, which is recommended as a contributing element of an eligible cultural resource under Criterion A and potentially eligible under Criterion D. The levee will cause both direct impacts to the site by disturbing and covering a portion of the ground surface, as well as indirect impacts by introducing another nonhistoric visual intrusion into a rare vestige of the historic battlefield landscape.

11.0 EVALUATION AND TREATMENT RECOMMENDATIONS

An evaluation of the cultural resources in the BRCMP survey area near Byram's Ford is presented in Section 11.1. Proposed treatment recommendations for cultural resources are presented in Section 11.2.

11.1 CULTURAL RESOURCE EVALUATION

One cultural resource, Site 23JA507, Locality A, was recorded as a result of the archaeological investigation for the BRCMP survey area near Byram's Ford. The site constitutes a relatively intact, 1.32 acre portion of the historic Big Blue Battlefield. The site is judged as eligible for the NRHP under Criteria A and D, and is recommended for addition to the existing NRHP listed Byram's Ford Historic District.

The remainder of the survey area, including land on both the east and west sides of the Big Blue River, was determined to lack archaeological integrity as a result of extensive manmade and natural disturbances. Industrial park construction in the southern portion of the survey area, and a former residential subdivision as well as grading and filling in the northern portion of the survey area west of the river have obliterated any archaeological remains of the Civil War battles. On the east side of the Big Blue River, most of the survey area has been subjected to severe and periodic flooding exacerbated by culverts under Hardesty Avenue which resulted in scouring and depositional processes that have erased the archaeological record of the Battle(s) of the Big Blue. Near the north end of the survey area on the east side of the river, Twentieth Century residential development along Hardesty Avenue has further impacted the archaeological integrity of the survey area. In contrast, the two parcels which constitute the existing Byram's Ford Historic District contain distinct remains of the Byram's Ford Road which was a focal point of the Civil War battle(s).

11.2 PROPOSED TREATMENT RECOMMENDATIONS

Avoidance of Site 23JA507, Locality A is not feasible, and the following treatment is recommended to mitigate the anticipated adverse effect to the site:

1. Data recovery by complete metal detector coverage of the area to be disturbed or covered by the levee should be conducted by an experienced metal detector operator under the supervision of a qualified historical archaeologist. The search pattern to be employed in the data recovery phase shall involve intensive metal detector scanning of standard sized areal units (e.g., 4 m squares) from a grid imposed over the survey area. Each delineated grid unit should be completely covered by metal detector and signal locations flagged before proceeding to the next grid unit. Any finds from the metal detecting shall be point plotted from a solitary site datum, and provenience information shall also include the depth of the artifact below ground surface. All artifacts retrieved from the data recovery effort shall be assigned a unique field specimen number and will be removed for analysis.
2. Artifacts recovered from the site as a result of the data recovery investigation shall be analyzed to facilitate interpretation of the archaeological record of the battle. Analysis shall include artifact identification and assessment of the spatial patterning of the artifacts with respect to the historical record of the military events documented in the Byram's Ford vicinity.
3. The results of the data recovery investigation shall be reported in accordance with professional standards for historical archaeology. The data recovery report will be included as an appendix to the Phase I archaeological survey report. Any artifacts collected during data recovery shall be curated per professional standards at a suitable repository.

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4. Photographs of Site 23JA507, Locality A shall be taken prior to construction to document the present appearance of the property. A minimum of four different views shall be taken, showing the property and its relationship to the surrounding setting. The photographs shall be produced in 35 mm format with high resolution black and white film. The film shall be developed using recognized archival processes and chemicals, and the prints shall be produced on 5 x 7" size archivally stable fiber-based paper. The prints shall be labeled with the following information: photograph number, project name, date, photographer, description of view, and direction of view.

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APPENDIX A:
SMALL ARMS USED IN THE BATTLE(S) OF THE BIG BLUE

SMALL ARMS USED IN THE BATTLE(S) OF THE BIG BLUE

Due to the large numbers of troops and great variety of different units assembled by both the Union and Confederate armies during Price's Raid into Missouri in the fall of 1864, the armaments employed in the two consecutive days' battles at Byram's Ford of the Big Blue River are amazingly diverse. While no systematic study has yet been completed of the troop armaments used in these cavalry engagements, there are abundant clues in the vast literature concerning the Price Raid and the Battle of Westport.

It is generally accepted that the Union troops were better equipped than their Confederate counterparts, including the small arms they carried. The vastly superior economic and industrial resources of the Union, combined with the relatively late occurrence of the Battles of the Big Blue and Westport in the chronology of the American Civil War, enabled many federal units to fight with newer and better guns, especially breech-loading repeating rifles and carbines.

Elements of General Blunt's provisional cavalry division, for example, including Foster's Missouri Cavalry Battalion, were armed with Martin-Henry breech-loading rifles, capable of firing 16 rounds (with copper-cased .44 caliber cartridges) before reloading (Grover 1912:174). Henry repeating rifles were also used by some of Colonel Phillips's 1st Brigade in General Pleasonton's provisional cavalry division, which participated in the action at Byram's Ford on October 23rd (Jenkins 1906:Plate IX). The Henry rifle was considered the most technically advanced firearm used in the Civil War, and most of these weapons in the hands of Union troops were privately purchased rather than issued by the government (Coates and Thomas 1990:32).

Other elements of Pleasonton's command, including the 4th Iowa Veteran Cavalry, were equipped with new Spencer breech-loading carbines in July 1864, replacing their earlier armament of Union and Sharp's carbines (Scott 1893:183, 282). The Spencer carbine was

widely touted as a superior cavalry weapon, in part because of its capability of holding seven .52 caliber metallic cartridges, including six in a magazine in the stock (Scott 1893:283-284). The Spencer bullet was a conical projectile with three circumferential grooves or rings. The Seventh Missouri State Militia Cavalry, also part of Pleasonton's 1st Brigade, was issued the Smith breech-loading carbine, a single-shot weapon which fired a .50 caliber bullet with a rubber-cased cartridge ignited by a musket cap struck by an external hammer. Over 31,000 Smith carbines were issued to federal troops during the Civil War (Jenkins 1906:Plate IX; Coates and Thomas 1990:47).

Other Union small arms which may have been used in the actions near Byram's Ford include Burnside carbines, muzzle-loading Enfield rifles, and a variety of revolvers. The .54 caliber Burnside carbine was the third most widely used carbine supplied to Union cavalymen, with over 50,000 issued. Like the Smith carbine, the Burnside carbine was an externally primed, single-shot weapon that fired a metallic cartridge and a double-grooved conical bullet. One specimen of a Burnside carbine bullet recovered from the Big Blue Battlefield was depicted in Jenkins (1906:Plate X). The well-made British Enfield rifled musket, a .577 caliber long arm more commonly used by the Confederates, was reportedly supplied to elements of the Kansas State Militia (Monnett 1995:46). It is possible that Colonel McCain's 4th Kansas Militia, part of Colonel Charles Blair's 3rd Brigade under General Blunt, used Enfield rifles while defending Byram's Ford from the Confederate assault on October 22. When used by Union troops, the Enfield rifle could chamber the standard .58 caliber federal round (with paper cartridge), which had three circumferential grooves (Coates and Thomas 1990:19). Union cavalymen were often armed also with revolvers, most commonly with Colt's .36 caliber "Navy" and .44 caliber "Army" six-shot, single-action, externally primed revolvers (Coates and Thomas 1990:54-55). Colonel Phillips of the Seventh Missouri State Militia Cavalry carried a pair of these .36 caliber revolvers into battle at Byram's Ford, and specimens of ammunition from similar weapons have been found on the Big Blue Battlefield (Jenkins 1906:Plates X, XII).

Confederate armaments are less well-documented than those used by the Union army during the Price Raid. The Confederate "Army of the Missouri" appears to have been equipped primarily with British Enfield rifles of .577 caliber, which one Union officer described as "a long single barreled, unwieldy muzzle loading gun, wholly unfit for cavalry use" (Grover 1912:174). The Enfield fired a massive conical projectile with a hollow or concave base; this bullet is known as a Pritchett round in recognition of its inventor. The Enfield rifle was the most widely used Confederate long arm of the Civil War, and despite being renowned for its quality of construction and accuracy, its employment by cavalry units reflects the lack of arms better suited to equestrian military tactics, such as carbines.

The Confederate cavalry also undoubtedly carried a variety of other firearms into the Battle of the Big Blue, including revolvers and captured arms. Plundering was a specific objective of Price during his invasion into Missouri in the fall of 1864, and among his prizes was the capture of federal supply train on October 3, 1864, near Jefferson City which provided 400 Sharps rifles to his troops (Monnett 1995:26). The Sharps rifle was a breech-loading long arm which used an externally primed .52 caliber bullet with a combustible cartridge (Coates and Thomas 1990:34). Unfortunately, it is not known if these or any other captured Union weapons were used at Byram's Ford by Shelby's troops on the 22nd or Marmaduke's troops on the 23rd of October.

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**ARCHAEOLOGICAL DATA RECOVERY INVESTIGATIONS
OF A PORTION OF THE BIG BLUE BATTLEFIELD,
IN KANSAS CITY, JACKSON COUNTY, MISSOURI
(SITE 23JA507, LOCALITY A)**

Addendum to

**Prelude to Westport: Phase I Archaeological Survey of a Portion of
the Big Blue Battlefield in Kansas City, Jackson County, Missouri**

Prepared for

**Burns and McDonnell
Kansas City, Missouri**

and

**U.S. Army Corps of Engineers, Kansas City District
Kansas City, Missouri**



**Corps of Engineers Contract DACW41-95-D-0016
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By

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MAI Project 02992-01**

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ABSTRACT

In January of 1997, TRC Mariah Associates Inc. of Laramie, Wyoming, completed an archaeological data recovery investigation of Site 23JA507, Locality A, a relatively intact 1.32-acre portion of the historic Big Blue (or Byram's Ford) Battlefield in Kansas City, Jackson County, Missouri. The site was identified as a result of a Phase I archaeological inventory of lands adjacent to the Big Blue River near Byram's Ford, upon which a proposed flood control levee is being planned by the U.S. Army Corps of Engineers, Kansas City District, in conjunction with the Blue River Channel Modification Project. This report is an addendum to the Phase I report (Marmor 1996). The site was evaluated as significant under National Register of Historic Places Criteria A and D for its association with the military campaign led by Confederate General Sterling Price in the Trans-Mississippi theater during the American Civil War and for its demonstrated archaeological data potential. The data recovery phase involved systematic metal detecting of the site/locality to plot, recover, and analyze metallic artifacts associated with the battles which occurred in the vicinity of Byram's Ford on October 22 and 23, 1864. A total of three definite battle-related munitions artifacts was recovered during the data recovery phase, as well as one other possible battle-related artifact. These finds were assessed in the context of the battles and are recognizable signatures of the combatants. These data, coupled with other artifacts recovered during the inventory phase, as well as by nonproject-related relic hunting, further identify the specific military units present and corroborates the documentary record testifying to the intensity of the combat in this vicinity, as well as the wide range of armaments used.

ACKNOWLEDGEMENTS

TRC Mariah Associates Inc. expresses its sincere appreciation to a number of individuals who provided valuable assistance during the data recovery project. Metal detector operator Rick Graff demonstrated his skill and expertise in the field despite very cold conditions and graciously provided the principal investigator with data concerning his previous finds from the project area. Gil Bergman, a military historian and member of the Civil War Round Table of Kansas City, volunteered his time to assist with setting up the metal detecting grid and mapping the artifact locations and provided valuable insights about the armaments used in the battles of the Big Blue/Byram's Ford and Westport useful for the interpretation of the archaeological data. Archaeologist Dan Shinn of Burns and McDonnell also assisted with the task of establishing the data recovery grid. Stephen J. Allie, Director of the Frontier Army Museum on Fort Leavenworth, kindly responded to our request for assistance by providing bullet identifications. Finally, Dr. Robert Ziegler, Archaeologist with the U.S. Army Corps of Engineers, Kansas City District, provided valuable assistance for the duration of the project.

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1.0 INTRODUCTION

On January 4 and 5, 1997, TRC Mariah Associates Inc. (TRC Mariah) of Laramie, Wyoming, conducted a data recovery investigation of Site 23JA507, Locality A, a 1.32-acre portion of the historic Big Blue (or Byram's Ford) Battlefield located in urban Kansas City, Jackson County, Missouri (Figure 1.1). The battlefield represents a major event in the Confederate raid into Missouri and Kansas led by General Sterling Price in the fall of 1864 and was the scene of two separate military engagements over a two-day period (October 22 and 23, 1864) at a strategic ford (Byram's Ford) of the Big Blue River.

The investigation was performed by TRC Mariah under contract to Burns McDonnell and the U.S. Army Corps of Engineers, Kansas City District (COE-KCD). The investigation was required to mitigate anticipated adverse effects to the site, which was evaluated as eligible for inclusion on the National Register of Historic Places (NRHP) under Criteria A and D and was also recommended for addition to the existing NRHP-listed Byram's Ford Historic District (Marmor 1996). The data recovery project followed a Phase I archaeological survey of an approximate 30-acre portion of the historic Big Blue Battlefield that was subject to potential effect from implementation of the Blue River Channel Modification Project, a flood protection project administered by the COE-KCD. The project includes construction of an earthen levee across the eastern and southern portions of a vacant field containing Site 23JA507, Locality A. The data recovery investigation followed the proposed treatment recommendations presented in the Phase I survey report (Marmor 1996:72-73) to which this current report is an addendum. Data recovery was completed in accordance with a Programmatic Agreement (PA) between the COE-KCD, the Advisory Council on Historic Preservation, and the Missouri State Historic Preservation Officer signed by all parties in 1995.

The Phase I survey identified a relatively intact portion of the Big Blue Battlefield comprising a vacant 1.32-acre area on the west side of the river within Byram's Ford



Figure 1.1 Location of Site 23JA507, Locality A, Identified on Kansas City, Missouri-Kansas (1991), USGS 7.5' Quadrangle (1:24,000 Scale).

Industrial Park (Figure 1.2). This small portion of the battlefield was designated as Locality A of the Big Blue Battlefield (Site 23JA507). The site (Locality A) is a roughly rectangular area situated in an undeveloped, grass-covered field bounded on the north and east by 60th Street, on the south by the bank of the Big Blue River, and on the west by the brick Dupont Chemical Company building. It measures approximately 180 ft (55 m) N-S by 320 ft (88 m) E-W, enclosing an area of approximately 1.32 acres. The parcel is currently owned by Commerce Bank but is to be transferred to the City of Kansas City Parks Department in the near future.

Locality A occupies a relatively level terrace covered with poorly drained Bremer silt loam, a soil type characterized by black friable silt loam over a dark silty clay loam subsoil (Soil Conservation Service 1984). Because of its long history of cultivation, Locality A supports a low diversity of vegetation, primarily consisting of a mix of grasses. At the time the data recovery investigation was conducted, the grass cover was relatively low, varying from approximately 4 to 8 inches in height depending upon species. A solitary mature cottonwood tree is situated at the southwest corner of the site, and a smaller tree grows near the center of the site's eastern boundary. The south edge of the terrace containing the site is marked by riparian forest along the channel of the Big Blue River. This riparian forest contains a mix of tree species, including American elm, sycamore, bur oak, and Eastern cottonwood.

Systematic metal detecting and shovel testing during the Phase I survey demonstrated that, although the soil had been repeatedly tilled as a result of past agricultural land use, the area designated as Locality A of Site 23JA507 has not been altered by construction or earth moving activity (cutting or filling). The site was found to contain shallowly buried, Civil War period, battle-related artifacts. Additional credible evidence for archaeological data potential came from avocational Civil War relic collectors and metal detector enthusiasts, who indicated that numerous battle-related artifacts had been recovered from Locality A (Marmor 1996:56, 59).

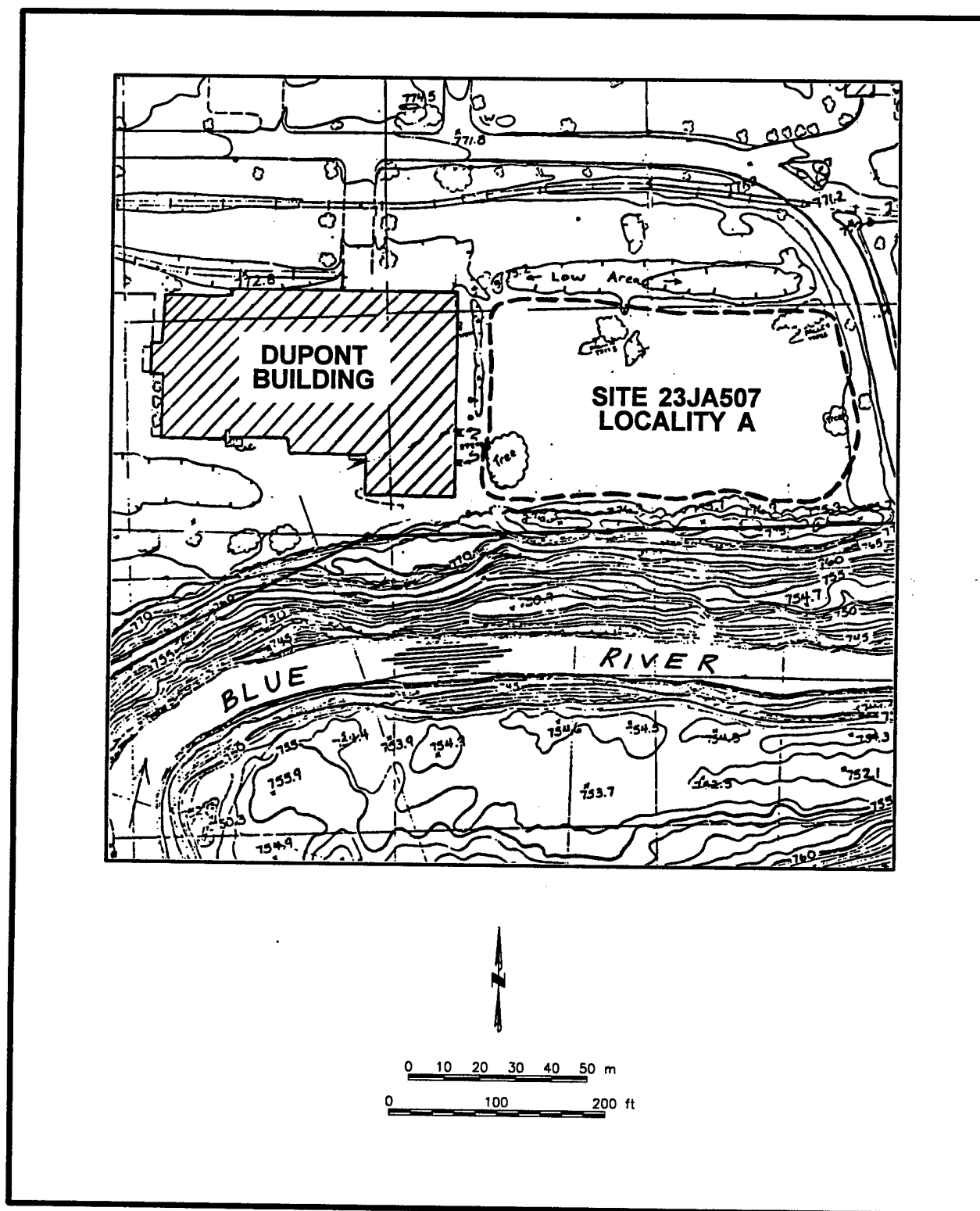


Figure 1.2 Topographic Map of Site 23JA507, Locality A, Within Byram's Ford Industrial Park.

Jason Marmor, historical archaeologist for TRC Mariah, served as Principal Investigator and led the field investigation. Mr. Marmor was also responsible for carrying out the artifact analysis and authored this data recovery report. TRC Mariah Cultural Resource Management (CRM) Program Manager Craig Smith served as Project Manager, with Burns and McDonnell archaeologist Dan Shinn managing the subcontract to TRC Mariah. Dr. Robert Ziegler of the COE-KCD oversaw the project and supervised its implementation. Rick Graff served as archaeological technician and metal detector operator. The artifact illustrations were completed by Darryl Newton of TRC Mariah. Military historian Gil Bergman assisted with the artifact analysis and authored a brief technical report included as Appendix A. Stephen J. Allie, Director of the Frontier Army Museum on Fort Leavenworth, provided assistance with the identification of bullet types.

The following sections detail the research objectives, methods, and results of the data recovery investigation. As stipulated by the PA, all artifacts recovered during the project will be placed in a suitable curation facility within the State of Missouri selected by the COE-KCD.

In addition to the archaeological data recovery, TRC Mariah carried out photographic documentation as prescribed in the Scope of Work. The photographic documentation was intended to capture images showing the present (pre-construction) appearance of the property. A minimum of four different views were required, showing the property and its relationship to the surrounding setting. The photographs were produced in 35 mm format with high resolution black and white film (Kodak Plus-X Pan, ASA 125). Ten prints were produced with archival quality developing and printing onto 5 x 7-inch size archivally stable fiber-based paper. The labeled photographs are not bound in with the data recovery report. The photographs and field report have been submitted to the Historic Preservation Program and will be filed with the NRHP nomination for the Big Blue Battlefield.

2.0 PROJECT OBJECTIVES AND RESEARCH DESIGN

The archaeological data recovery investigation was guided by a series of predetermined objectives, and research questions were posed to which the expected types of data would apply. The following sections present the project objectives, research design, and historical background which formed the foundation of the study.

2.1 PROJECT OBJECTIVES

The primary goal of the data recovery investigation of Site 23JA507, Locality A, was to collect and interpret data relating specifically to the Civil War military actions that render the site historically significant under NRHP Criteria A and D. The fundamental objectives of the data recovery investigation were to 1) recover, insofar as possible, all of the remaining metallic battle-related artifacts; 2) analyze and interpret all battle-related artifacts recovered from the site as a result of the data recovery effort; and 3) synthesize the cumulative archaeological data relating to the military events as obtained from the site through the Phase I survey, data recovery phase, and nonproject-related relic collecting. A final objective of the data recovery investigation was to recover battle-related artifacts to curate for possible future study and interpretive use (c.f. Miller and Walsh 1995:89).

2.2 RESEARCH DESIGN

A research design was formulated to guide the data recovery investigation. Because the Phase I inventory determined that Site 23JA507, Locality A, lacked features (e.g., entrenchments) but contained the potential for metallic subsurface battle-related artifacts (primarily munitions), the data recovery phase was necessarily oriented toward the efficient recovery of metallic artifacts by means of electronic metal detecting devices. Battlefields in which firearms and artillery were employed typically exhibit a patterned spatial distribution of fired and unfired bullets, cartridge cases, fragmentary artillery projectiles,

uniform parts, and other metallic items discarded, dropped, or lost during combat. The concept of artifacts as behavioral "signatures" is particularly useful to the process of deciphering the archaeological record of a military battle (Scott et al. 1989:6; Gould 1983:105-106).

The investigation was designed to provide valuable information to be analyzed in conjunction with the historical record of the military events that transpired at Byram's Ford. The historical or documentary record was to be used in two major ways. First, the voluminous documentary information about the Battle(s) of the Big Blue reveals that a wide variety of arms were employed in the battle(s) and that specific munitions types can often be identified as to Union or Confederate origin and, in some cases, can even be attributed to specific units (see Marmor [1996], Appendix A). Thus, the historical record would aid in identifying the archaeological signatures of combatants. Second, the known or probable troop positions and movements as presented in the historical record should enable trajectories of fire and troop movements represented by the battlefield artifacts to be discerned.

The research problems posed during the data recovery phase are similar to those posited prior to the Phase I archaeological survey.

1. Does the archaeological record of the site (Site 23JA507, Locality A) reflect the known chronology of the military actions near Byram's Ford on October 22 and 23, 1864, including troop movements and the relative intensity of the fighting? The Independence to Little Santa Fe Road (A Santa Fe Trail variant, later known as Byram's Ford Road) appears to have passed through Locality A, and the historical record indicates that the road figured prominently in the battle(s).

2. What does the archaeological record of the site reveal about the armaments employed by the opposing sides and what are the implications on the outcome of the conflict? Both historical and archaeological studies indicate that there are archaeologically verifiable differences in armaments employed by the Union and Confederate troops, particularly the distinction between breech-loading, repeating rifles and carbines used by the Union troops and the muzzle-loading rifle muskets employed by Price's army (Lees 1994:50; Castel 1968:230).

The above research questions can be addressed by analysis of battle-related artifacts such as bullets and uniform parts. Small arms ammunition and buttons are examples of highly diagnostic military artifacts that serve as distinct "signatures of behavior" specific to the Battle of the Big Blue. Because these diagnostic artifacts are metallic, their discovery and recovery can be facilitated by the use of sensitive modern electronic metal detectors. Metal detectors have already been used successfully in a series of archaeological studies of battlefields and other military sites, including sites associated with the American Revolutionary War (Sivilich 1996), the Mexican War of 1846-1848 (Haecker 1994; Schreier 1975), the American Civil War (Lees 1994, 1995), and the Indian Wars (Vaughn 1966; Scott and Fox 1987; Scott et al. 1989).

A low to very low quantity of battle-related artifacts was expected. This prediction was based upon a variety of factors, including the relatively small area (approximately 1.3 acres), the known disturbance of the topsoil by years of agricultural land use (e.g., periodic tilling), and more recently by avocational relic collecting with the aid of increasingly sophisticated electronic metal detectors. The expectation of a small yield of battle-related artifacts also reflects the inherent technical limitations of hand-held metal detectors and operators; for example, the inverted cone-shaped signal produced by the circular search coil of a metal detector reduces the chance of detecting all metallic items with increasing depth. It is also difficult for a metal detector operator to control the exact length and height of each pass

of the search coil over the ground to guarantee 100% coverage of the surface, not to mention the subsurface. Nevertheless, a highly skilled and experienced metal detector operator equipped with a sensitive and sophisticated machine will likely achieve a fairly high degree of coverage and will find a high percentage of the extant metallic artifacts.

2.3 HISTORICAL BACKGROUND

The history of the Battle of the Big Blue or Byram's Ford is recounted in detail in the Phase I archaeological survey report (Marmor 1996:25-37), but a sketch of the key events is repeated below. References to primary and secondary source material are provided in the historical overview contained in the survey report. The battle actually consisted of two separate engagements on two consecutive days: October 22 and 23, 1864. The first engagement involved the federal (Union) defense of a 15-mi long fortified line established along the west side of the Big Blue River, resisting the eastward advance of a large Confederate force under the command of General Sterling Price. The federal troops, bolstered by various Kansas State Militia units, were assembled as the "Army of the Border" under the command of Major General Samuel R. Curtis.

Byram's Ford, through which passed a Santa Fe Trail variant connecting Independence to Little Santa Fe and Westport, was the focus of a concentrated and ultimately successful Confederate attack on October 22. General Curtis ordered the 1st Brigade led by Colonel C.R. Jennison (of the 15th Kansas Cavalry) to the defense of the strategically important ford, along with the 4th Kansas Militia, an element of the 3rd Brigade led by Colonel C.W. Blair. The 4th Kansas Militia was under the command of Colonel W.D. McCain. The federal defense of Byram's Ford was bolstered by (Second Lieutenant H.L.) Barker's Battery of five 12 pounder mountain howitzers. The Confederate troops that were involved in the assault on Byram's Ford included Jackman's Brigade (under Colonel S.D. Jackman) supported by Shelby's "Iron" Brigade under General M. Jeff Thompson. For reasons that

are not clear, Collins's Missouri Battery of four guns, assigned to Shelby's Division, did not participate in the action at Byram's Ford on October 22.

Around 11:00 a.m. on October 22, Jackman's and Shelby's Brigades initiated a strong frontal assault on the ford, which was defended by the federal skirmish line, artillery fire, and abatis from felled trees obstructing the crossing. The battle was stalemated until another component of Shelby's Brigade--(Lieutenant Colonel Alonzo W.) Slayback's Missouri Cavalry Battalion--effected a crossing of the Big Blue downstream (probably at Hinkle's Ford) and flanked the Union position, allowing Jackman's troops to gain a foothold on the west side of the river and by mid-afternoon compelling the Union defenders to withdraw westward toward Westport. The precise troop positions and movements of the battle on October 22 are not well-documented. Jackman's and Shelby's Brigades continued their westward advance toward Westport, while a rear guard composed of Major General John S. Marmaduke's Division also crossed the Big Blue. The Confederate troops under Marmaduke encamped on the night of October 22 near Byram's Ford, during which time Price's sizeable wagon train reportedly crossed the river and continued southwestward toward Little Santa Fe and safety.

The following day, October 23, 1864, witnessed a reversal of the military action of the previous day. A pursuing federal cavalry force under the command of Major General Alfred S. Pleasanton caught up with Marmaduke's troops camped just west of the Big Blue. Anticipating the impending assault by Pleasanton's forces, General Marmaduke had established a skirmish line along the bank of the river, but deployed his main force on the crest of an elevated terrace or bluff about 0.25 mi to the west. Hynson's Texas Battery, with three guns, was advantageously situated to cover Byram's Ford. The federal troops led by Pleasanton opened the attack in the morning of October 23 and met with fierce resistance from small arms and artillery fire. Composing Pleasanton's force were the 1st, 4th, and 7th Missouri Militia Cavalry and a detachment of the 1st Iowa Cavalry, led by Colonel John F. Phillips, as well as the 4th Iowa Veteran Cavalry, the 3rd Iowa Cavalry, and the 10th

Missouri Cavalry, all under Colonel E.F. Winslow. The federals also had support from the 2nd Missouri Light Artillery Battery, armed with three 3-inch Ordnance rifles.

Lodgements were made by the 3rd Battalion of the 4th Iowa Veteran Cavalry under Captain Edward Dee approximately 0.25 mi to the north of the ford, while Lieutenant Colonel Thomas T. Crittenden led the 7th Missouri State Militia Cavalry across the ford, followed by Major George W. Kelly's 4th Missouri State Militia Cavalry. The Confederate skirmish line was driven back across the open area that included Locality A, and the Union assault then shifted westward and concentrated upon the Confederate position commanding the bluffs behind a limestone scarp still visible today on the west side of the active railroad line. According to a map drawn by a participant in the battle, the 7th Missouri State Militia Cavalry likely advanced across the vicinity of Locality A close to the Independence-Little Santa Fe (Byram's Ford) Road on its way to the Confederate line atop the bluffs. Closely supporting the 1st and 4th Brigades (led by Colonels Phillips and Winslow, respectively) across Byram's Ford was General John B. Sanborn's 3rd Brigade.

The determined Confederate resistance was broken after a period of fierce combat that caused approximately 200 Union casualties and an undermined loss of Confederate soldiers. The 4th Iowa Veteran Cavalry, armed with Spencer repeating carbines, managed to reach the top of the bluff and initiated a charge that sent Marmaduke's troops into a hasty eastward retreat. Pleasonton's army pursued the fleeing Confederates across the prairie toward Westport, in the vicinity of which other elements of Price's and Curtis's armies were engaged in battle. On the early morning of October 24, General A.J. Smith and his force of approximately 10,000 infantrymen of the 16th Army Corps arrived at Byram's Ford and traversed the battlefield via Byram's Ford Road on their way south toward Little Santa Fe. Thus, some of General Smith's infantry may have passed across Locality A, too late to participate in the battle.

3.0 METHODS

The methodology employed in the data recovery investigation of Site 23JA507, Locality A, was intended to concentrate upon the recovery and analysis of all remaining in situ metallic battle-related artifacts. The field methods are presented in Section 3.1. The laboratory methods are detailed in Section 3.2. Analytical methods are presented in Section 3.3.

3.1 FIELD METHODS

Data recovery from Site 23JA507, Locality A, was accomplished by systematic metal detector coverage of virtually the entire surface of the site. A solitary skilled metal detector operator was employed, using a sophisticated White's Eagle Spectrum electronic metal detector. The search pattern was controlled by imposition of a grid oriented to true cardinal directions and divided into standard 5 m grid units (Figure 3.1). The purpose of the grid was to assure complete and systematic coverage of the site surface and was not intended nor used to accurately determine artifact locations. Each grid square had a unique alphanumeric designation that corresponded to its distance north and east of the grid datum. Grid rows extending north of the datum were labeled A through K, while grid rows extending east of the datum were labeled 1 through 20. The grid datum was set at the grid's southwest corner and anchored the N-S and E-W baselines. The grid datum consisted of a rebar stake positioned 78° and 9.2 m from the SE corner of the Dupont Chemical Company building.

The metal detecting was conducted one grid square at a time, with the metal detector operator proceeding from the SW corner of the grid in an easterly direction along Row A, then westerly along Row B, and so on (Figure 3.2). Promising signal locations were immediately excavated and left in place with a pin flag to mark the location (Figure 3.3). Artifacts with a certain or possible association to the battle were collected, along with any artifacts potentially of prehistoric cultural origin and certain enigmatic and potentially battle-

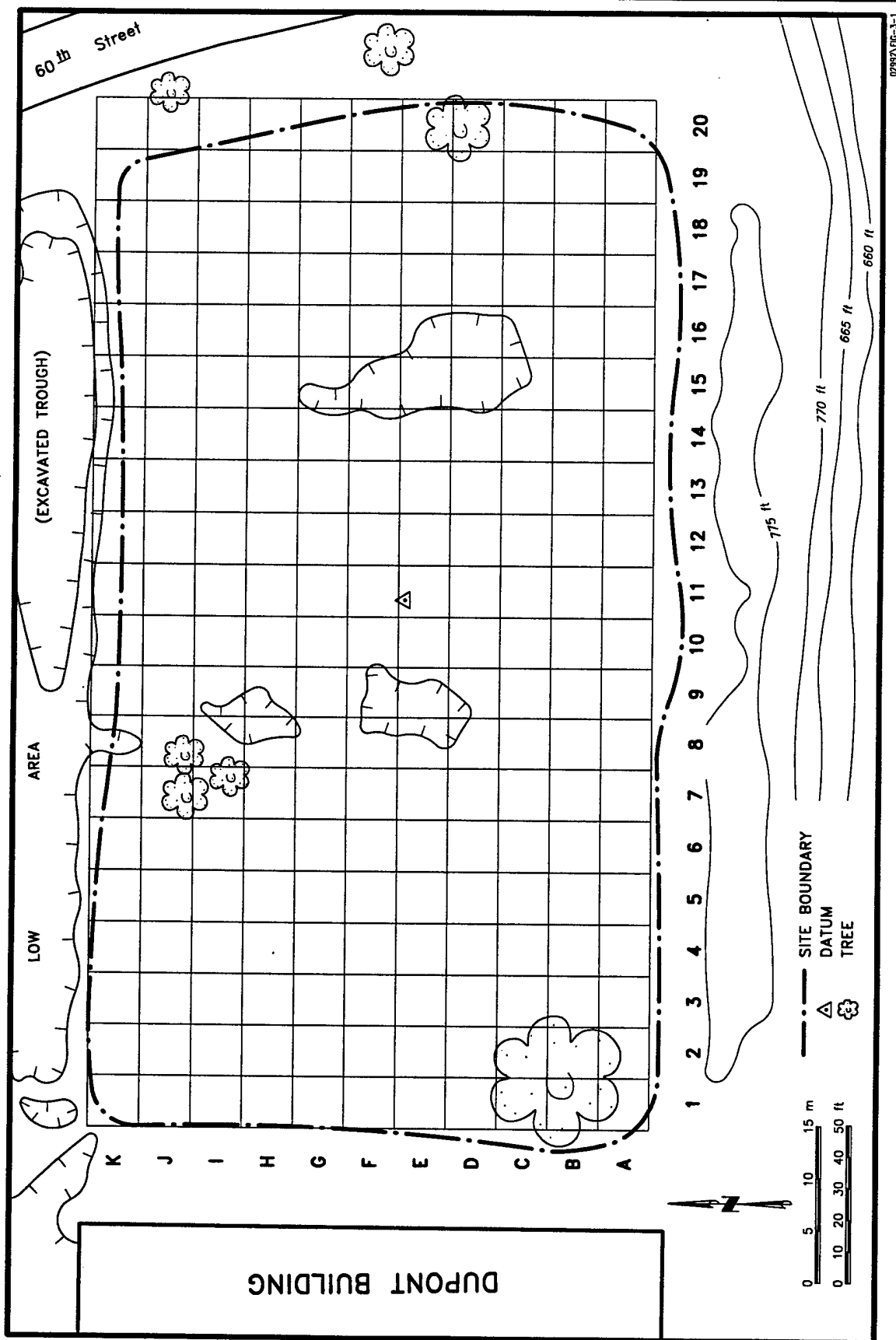


Figure 3.1 Map of Site 23JA507, Locality A Showing Metal Detection/Data Recovery Grid.



Figure 3.2 Metal Detector Operator Conducting Systematic Sweep of Grid Imposed Over Site 23JA507, Locality A. View Looking West-southwest.

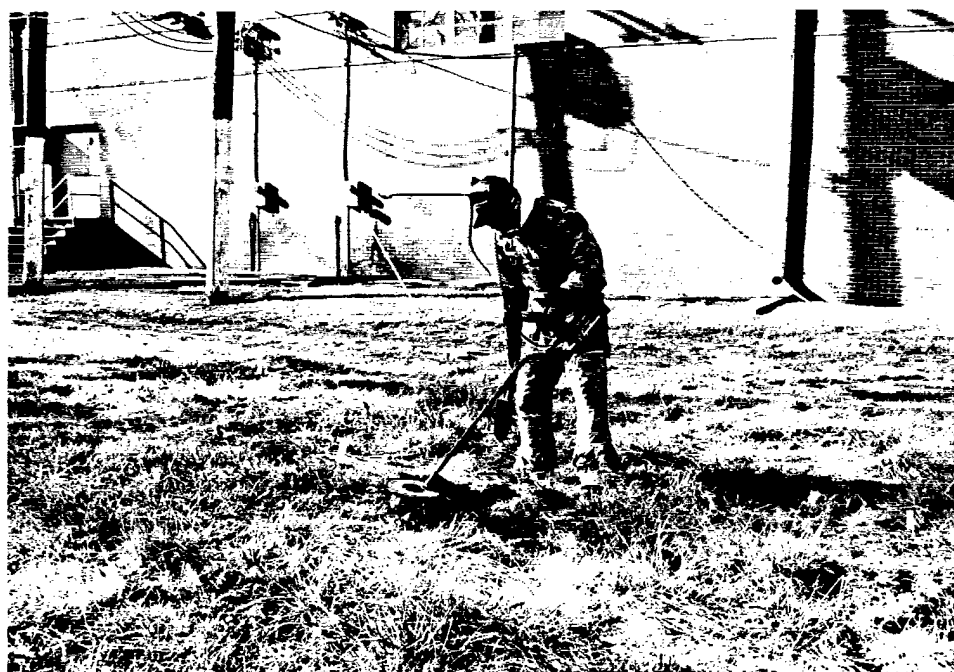


Figure 3.3 Metal Detector Operator Scanning Excavated Soil Plug to Determine Precise Location of Signal Indicating Presence of Metal Object. Dupont Chemical Company Building Visible in Background.

related artifacts that required more detailed examination in the laboratory to identify. All artifacts collected were point-plotted from an arbitrary rebar stake datum set at a location near the center of the site (see Figure 3.1). This artifact provenience datum was established 67° and 67.9 m from the SE corner of the Dupont building and 117° and 69.6 m from the NE corner of the Dupont building. Provenience information was recorded for each artifact to be collected, including its approximate depth below ground surface. Each collected artifact was assigned a unique field specimen (FS) number and placed in an envelope or other container clearly marked with the specimen identification and FS number. A field specimen collection log was completed during the data recovery to provide a listing of all of the artifacts recovered along with identification and provenience data.

3.2 LABORATORY METHODS

Battle-related and other artifacts were removed to TRC Mariah's archaeological laboratory in Laramie, Wyoming, for cleaning and analysis. Fragile artifacts such as cartridge cases were minimally cleaned, while more robust items were cleaned with a dilute solution of warm soapy water. No attempt was made to remove oxide coatings from artifacts, since these residues did not interfere with identification. Bullets and cartridge cases were identified with the aid of several published references to Civil War period arms including Coates and Thomas (1990), Thomas and Thomas (1996), and the Editors of Time-Life Books (1991a, 1991b). Additional assistance with bullet identification was provided by Stephen J. Allie, Director of the Frontier Army Museum, citing a comprehensive Smithsonian Institution publication on the subject (Lewis 1956). Small arms ammunition was additionally determined to be either fired or unfired, based on diagnostic attributes such as firing pin marks on cartridge cases and the relative deformity of the lead projectiles. Artillery ordnance recovered from the site was identified with reference to Ripley (1970) and with the assistance of military historian Gil Bergman.

3.3 ANALYTICAL METHODS

Artifact analysis involved a comparison of the archaeological data to the historical record of the battles at Byram's Ford on October 22 and 23, 1864. A wide variety of small arms were in use late in the Civil War, and bullets and cartridge cases are often diagnostic of specific firearms that can in some cases be linked by documentary evidence to specific military units (See Marmor [1996], Appendix A). Additional information concerning the armament carried by specific military units that participated in the battle(s) was provided by Gil Bergman of Kansas City, Missouri (see Appendix A). Once munitions artifacts are assigned to their likely military unit(s) of origin, it is a relatively straightforward process to compare troop positions indicated by the bullets with the troop positions and movements indicated contemporary maps and in written records.

4.0 RESULTS

Systematic metal detecting of Site 23JA507, Locality A, was completed on January 4 and 5, 1997. The data recovery investigation yielded a relatively small quantity of battle-related artifacts, as well as one artifact possibly associated with the battle (Figure 4.1). Several artifacts of questionable association with the battle(s) were also collected. All of these artifacts were buried from 3 inches to 7 inches below the ground surface. Additionally, numerous post-bellum metallic artifacts were unearthed during the fieldwork. The specific finds from systematic metal detecting are presented below.

4.1 BATTLE-RELATED ARTIFACTS

A total of three definite battle-related artifacts was recovered during the investigation. Two of these represent expended small arms ammunition, and the third is a piece of expended artillery ammunition. These include one fired copper cartridge case for a Henry .44 caliber repeating rifle (Figure 4.2a) and is undoubtedly of Union origin. Designated as FS-8, the rimfire cartridge is fired, with telltale linear firing pin marks on opposite sides of the basal rim of the cartridge. It was covered with a crust of copper oxide, and a portion of the case's barrel is broken off or has weathered away. Nevertheless, the cartridge case is in generally good, identifiable condition. The Henry cartridge case was buried at an estimated depth of 4 inches below the ground surface.

Also found was a solitary fired lead .58 caliber "Minie ball" designated as FS-10 (Figure 4.2b). This bullet has three circumferential grease rings and a deep concave basal cavity. It could have been used in any of several types of rifles and rifle muskets bored for .58 caliber muzzle loading ammunition, including the Union Model 1855 rifle or rifle musket, the Model 1861 rifle musket, the Saxon or "Dresden" rifle muskets Model 1851 and 1857, the U.S. Model 1841 "Mississippi" rifle, or the Confederate Fayetteville rifle (Coates and Thomas 1990). Thus, the bullet could have been of either Union or Confederate origin.

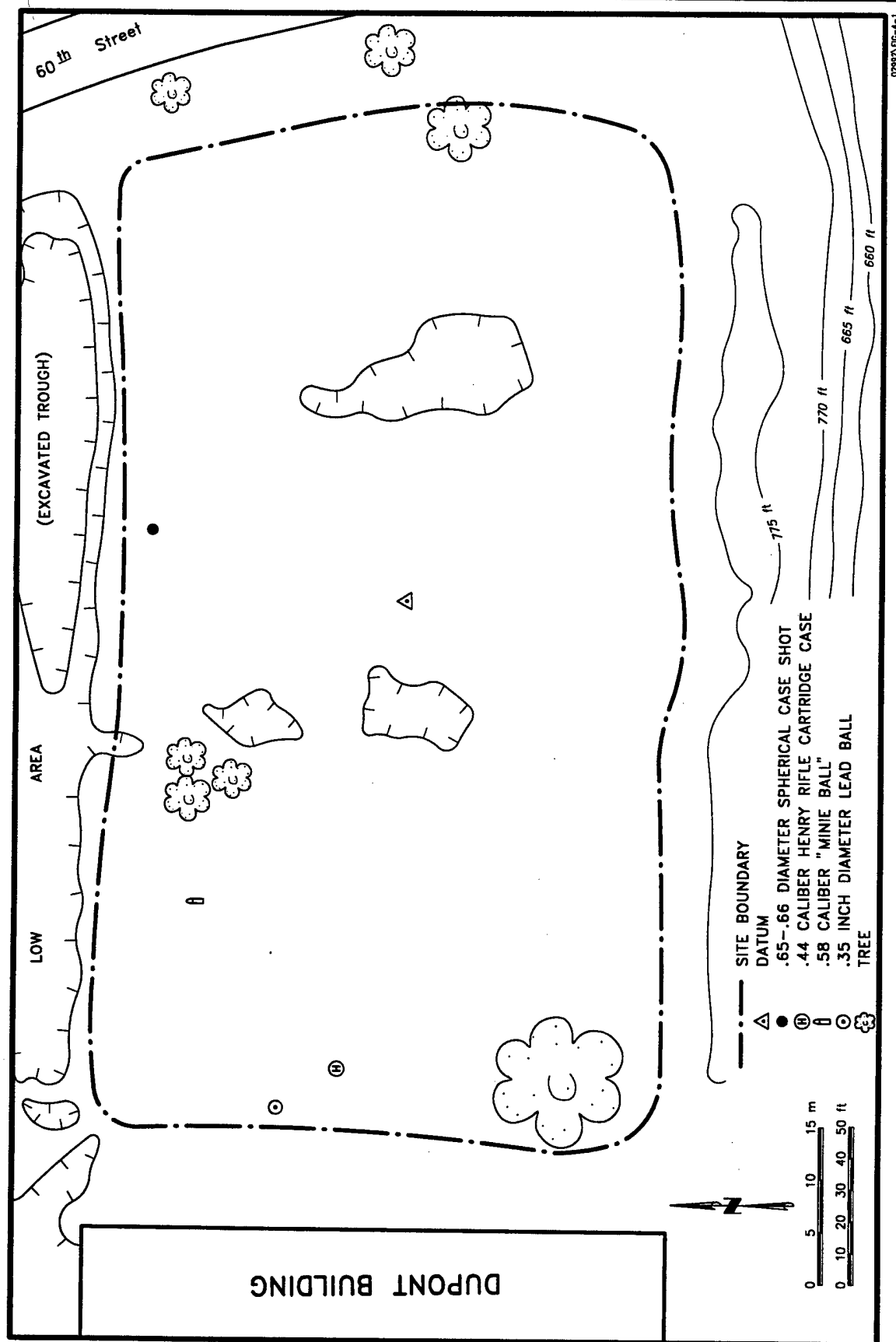


Figure 4.1 Locations of Battle-related and Potential Battle-related Artifacts Found During Data Recovery Investigation of Site 23JA507, Locality A.

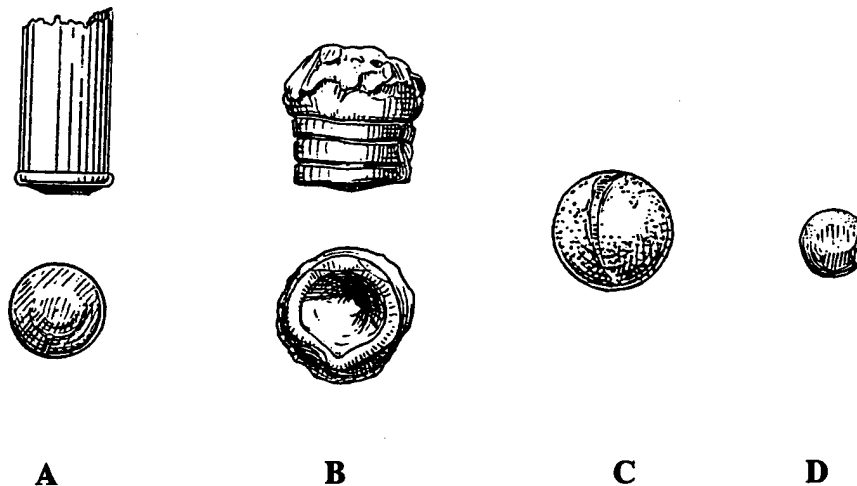


Figure 4.2 Battle-related and Possible Battle-related Artifacts Recovered During the Data Recovery Investigation of Site 23JA507, Locality A. A) Fired .44 Caliber Henry Rifle Cartridge Case; B) Fired .58 Caliber "Minie Ball"; C) .66 Caliber Lead Case Shot; D) .35 Caliber Lead Ball (1:1 Scale).

The bullet exhibits severe impact damage to its tip, which is flattened and expanded as a result of apparently striking a solid object. As is typical of cast lead objects buried over a long period of time, the Minie Ball is covered with a whitish coating of lead oxide. It was found approximately 5 inches below the ground surface.

The third battle-related artifact collected during the data recovery investigation was a virtually undamaged piece of lead shot from spherical case field artillery ammunition (Figure 4.2c). It consists of a molded solid lead ball approximately .65 inch in diameter with traces of a circumferential mold seam. The specimen (FS-12) is not deformed from its original spherical shape, but exhibits several linear incised marks and pits which are probably the result of manufacturing and handling rather than from explosion of the shell it was contained in. The shot ball was found at a depth of approximately 6-7 inches below the ground surface.

This specimen (FS-12) undoubtedly was derived from a round of "spherical case" and is almost certainly from a 12 pounder gun, howitzer, or mountain howitzer. Spherical case consisted of a thin-walled, hollow spherical cannonball filled with lead balls and an explosive charge to scatter them. Spherical case projectiles were generally fitted with a time fuse that detonated the shell at a predetermined range. The explosive charge in a spherical case round was designed only to be powerful enough to rupture the "case" and propel the balls forward along the trajectory of the projectile.

The size of lead balls ("shot") used in spherical case ammunition is diagnostic of the weapon from which it was fired. The size of case shot found during the data recovery investigation (0.65 inch diameter) is indicative of 12 pounder guns or howitzers (including the shorter barreled "mountain" howitzers). Each spherical case cannonball for this caliber weapon was 4.52 inches in diameter (the bore diameter of such guns was 4.62 inches) and contained approximately 80 such balls (Laidley 1861:35; Ripley 1970:379).

Spherical case was a refinement of the principle behind "canister" artillery ammunition. Canister consisted of a cylindrical projectile with iron top and bottom plates over which were bent the ends of a sheet tin cylinder. Canister projectiles were packed with four tiers of lead or iron balls and sawdust filler; 12 pounder mountain howitzers such as were used in the Battle of the Big Blue could fire a canister round filled with a total of 148 lead musket balls of 0.69 inch diameter (Ripley 1970:267-268). Canister was a refinement of the still earlier "grape shot" ammunition which utilized much larger balls of solid iron, and a canister round's load of smaller balls left the cannon tube in a cone-shaped pattern that created a lethal shotgun effect at the proper distance (Ripley 1970:267). Spherical case increased the reach of the shotgun effect by releasing the cluster of shot balls closer to the target, thereby minimizing the dispersion and loss of velocity of the shot balls normally resulting from flight over a long distance (Ripley 1970:268).

4.2 POTENTIAL BATTLE-RELATED ARTIFACTS

Only one potential battle-related artifact was found during the data recovery investigation; this was a slightly deformed spherical lead ball of approximately .35-inch diameter (Figure 4.2d). This ball likely represents a large shotgun pellet, approximating the .33 inch diameter of No. 00 buckshot, the largest standard shot size produced for American shotguns (O'Connor 1965:243). It is possible that it originated from a 12-gauge shotgun carried by a Confederate soldier involved in the combat at Byram's Ford. According to Coates and Thomas (1990:51), nonmilitary issue double-barreled shotguns were commonly used, and even favored, by Confederate cavalry.

4.3 POST-BELLUM ARTIFACTS

A wide variety of metallic artifacts of post-bellum origin were discovered as a result of systematic metal detecting of Site 23JA507, Locality A. The majority of these items were not collected. A very large number of modern bullets, including several that appeared to be virtually new, were unearthed. Most of these represent pistol rounds of .32 to .45 caliber. Other nonbattle-related artifacts found included an old (Kansas City) Metropolitan Police uniform button (Figure 4.3a), a fabric-covered metal furniture button (Figure 4.3b), a buckle for a rubber overshoe or galosh boot (Figure 4.3c); and a brass bell reducer fitting with an internally threaded 0.25-inch diameter barrel, that may represent an old gas light fitting (Figure 4.3d).

Other post-bellum artifacts noted but not collected or illustrated included a deteriorated specimen of a state-issued Missouri zinc 1-mill sales tax token of a type circulated in large numbers from 1937 to 1942 (Malehorn and Davenport 1993:149); a steel or alloy coffee can key; pull-tops from beverage cans; several pieces of deteriorated and unidentifiable ferrous plate and sheet metal; a long threaded rod; copper wire; round nails; and numerous pieces of foil. The seemingly random distribution of these metallic artifacts indicates that items

were dropped and (in the case of modern bullets) fired onto the property over many decades. Some of the artifacts may have been deposited during construction of the Byram's Ford Industrial Park in the 1950s, while other items such as the tax token and police button were likely deposited earlier during twentieth century agricultural use of the terrace.

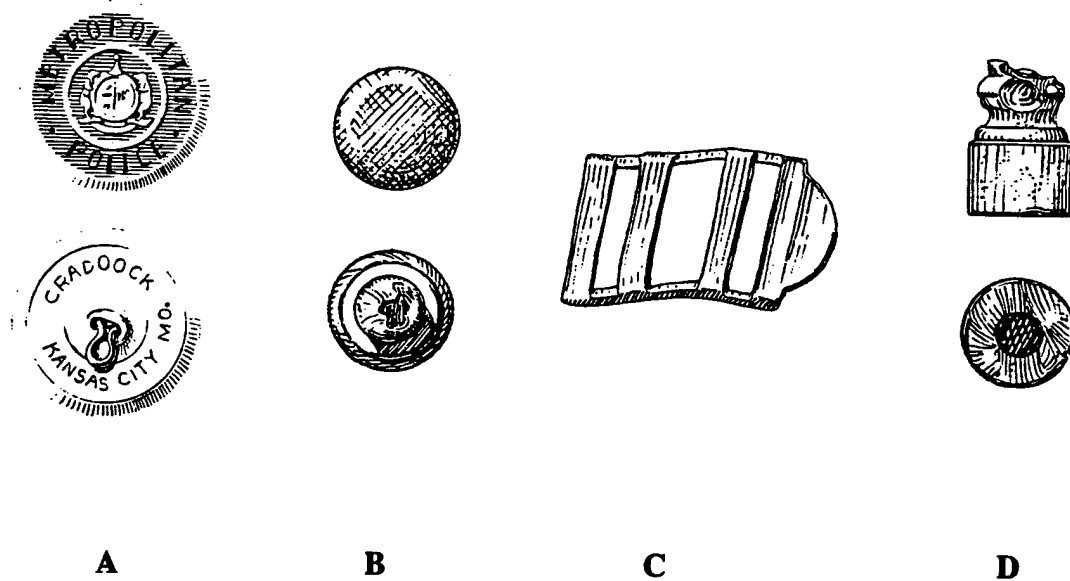


Figure 4.3 Examples of Post-bellum Metallic Artifacts Found During Data Recovery Investigation of Site 23JA507, Locality A. A) Kansas City Police Button; B) Fabric-covered Metal Button, Probably for Upholstered Furniture; C) Rubber Overshoe Buckle; D) Internally Threaded Brass Bell Reducer Fitting, Possibly for Gas Lamp (1:1 Scale).

5.0 DISCUSSION

The results of the data recovery investigation of Site 23JA507, Locality A, have generated a small but useful amount of additional information that can be compared with the historical record of the battle(s) near Byram's Ford on October 22 and 23, 1864. The historical implications from the archaeological data are presented below, followed by a discussion of the research questions posed in Section 2.2, above. Finally, a summary of the cumulative finds to date of battle-related artifacts yielded by the Phase I archaeological survey, the data recovery investigation, and nonproject-related or avocational metal detecting/relic collecting is presented.

Each of the three battle-related artifacts can be interpreted in light of the history of the military engagements. The .44 caliber Henry cartridge case is highly diagnostic of the relatively well-equipped Union army and may represent one of two or three possible troop units. For example, it could have been ejected from the rifle of a soldier in Foster's Missouri Cavalry Battalion, part of the 1st Brigade under Colonel C.R. Jennison that was posted to defend Byram's Ford on October 22. According to Civil War veteran George S. Grover, Foster's Battalion was armed with Henry breech-loading rifles (Grover 1912:174). It is just as likely, if not more so, that the Henry cartridge case was fired from the rifle of a trooper with General Pleasanton's provisional cavalry division that drove the Confederates from their positions on the west side of Byram's Ford the following day, October 23. Elements of the 1st Brigade led by Colonel Phillips (originally under the command of Brigadier General E.B. Brown), as well as at least one regiment of the 4th Brigade under Colonel E.F. Winslow, were reportedly armed with the venerable Henry rifles (Jenkins 1906:Plate IX; p. 128). According to William Forse Scott's (1893) map of the battle on October 23, Phillips's command moved across the vicinity of Locality A close to the Independence-Little Santa Fe (Byram's Ford) Road as it pressed the attack on Marmaduke's main battle line above the limestone scarp to the west of the terrace.

The .58 caliber Minie Ball may be of either Union or Confederate origin. It may have been fired from the muzzle-loading rifle or rifle musket of a Kansas State Militia soldier participating in the defense of the ford on October 22. Militia units were likely not as well-equipped as "regulars" (federal troops), and they would be more likely to be issued older or less sophisticated firearms than their enlisted counterparts. For example, the 4th Kansas Militia under Colonel W.D. McCain may have been armed with at least some muzzle-loading .58 caliber rifles or rifle muskets. Alternatively, it may have been fired from a Confederate muzzle loader such as the Enfield or Fayetteville rifle on either the 22nd or 23rd of October.

The origin of the piece of case shot recovered during the data recovery phase of the project is subject to multiple interpretations. It likely was derived from a spherical case round fired from a 12 pounder gun, howitzer, or mountain howitzer. The maximum range for spherical case fired from weapons present at the Big Blue battlefield varied from 1,135 yards (0.64 mi) for the standard 12 pounder Napoleon gun (M1857, Modified), to 1,050 yards (0.60 mi) for the standard 12 pounder (M1841) howitzer, to 800 yards (0.45 mi) for the 12 pounder (M1841) mountain howitzer (Ripley 1970:366-367).

The possible sources for the case shot, based on the historical record, are as follows.

1. October 22, 1864 - Second Lieutenant H.L. Barker's Battery, on the Union side, may have fired generally eastward at the Confederates who had achieved a crossing of the Big Blue river, before retreating to the west with the rest of the Union force. Barker's Battery was equipped with five 12 pounder mountain howitzers. The exact position of Barker's Battery in this engagement is not well-documented.
2. October 23, 1864 - General Marmaduke's army occupying the heights overlooking the Blue River west of Byram's Ford utilized a combination of

artillery weapons including 12 pounder Napoleon guns and 6 pounder smoothbores with which they bombarded the ford as Pleasanton's troops were forcing a river crossing and continuing their attack westward. Hynson's Texas Battery (Confederate), armed with two 12 pounder Napoleon guns and one 6 pounder smoothbore, was reportedly stationed atop the bluff or elevated terrain west of the limestone scarp, where it maintained a heavy barrage upon the ford and terrace to the west of the river as the Union troops made their assault (Monnett 1995:113-114). According to military historian Gil Bergman, Harris' Missouri Battery, with one 12 pounder Napoleon, two 6 pounder smoothbores, and one 3.8 inch James rifle, may also have participated in the Confederate defense of Byram's Ford on October 23 (see Appendix A).

Regardless of which side fired the round of spherical case, it likely came from the elevated terrain to the west, with an eastward trajectory toward the terrace containing Locality A. This inference is drawn from the known geographic disposition of 12 pounder guns used on both days (October 22 and 23, 1864), as well as by extrapolation of potential battery locations based on measurement of ranges (distances) from the specimen found during data recovery.

The research questions posed in Section 2.2 can be addressed with the new, albeit limited, archaeological data.

1. Does the archaeological record of the site (Site 23JA507, Locality A) reflect the known chronology of the military actions near Byram's Ford on October 22 and 23, 1864, including troop movements and the relative intensity of the fighting? The Independence to Little Santa Fe Road (later known as Byram's Ford Road) appears to have passed though Locality A, and the historical record indicates that the road figured prominently in the battle(s).

As shown earlier in this section, each of the three artifacts can be attributed to probable participant units in the engagements on October 22 and 23, 1864. Of course, deciphering the archaeological record of the battle is seriously complicated by the fact that the battlefield situation (attackers/defenders) was completely reversed on the second day's engagement. Nevertheless, it is likely that at least two items--the Henry rifle shell and the piece of case shot--represent the contested Union crossing of the Big Blue on October 23 and their continued westward attack. It can be posited with relative confidence that the Henry rifle cartridge case was associated with the advance of Colonel Phillips's command alongside Byram's Ford Road.

2. What does the archaeological record in the site reveal about the armaments employed by the opposing sides and what are the implications bearing on the outcome of the conflict? Both historical and archaeological studies indicate that there are archaeologically verifiable differences in armaments employed by the Union and Confederate troops, particularly the distinction between breech-loading, repeating rifles and carbines used by the Union troops and the muzzle-loading rifle muskets employed by Price's army (Lees 1994:50; Castel 1968:230).

The limited archaeological data from the data recovery phase verifies the use of technologically sophisticated Henry repeating rifles by the Union troopers who drove the Confederate force under General Marmaduke from the Byram's Ford vicinity on October 23, 1864. This small bit of evidence tangibly reflects the overall technological superiority of the Union soldiers' arms, which was a significant factor in the defeat of the rebel army at the Big Blue and, later, at Westport. The advantage inherent in the Union's weaponry was told convincingly by the Reverend Paul Jenkins in his book, *The Battle of Westport* (1906:128):

Phillips', Benteen's and Winslow's men were far more effectively armed than were Marmaduke's, the Seventh Missouri (Federal) being armed with the Smith breech-loading carbine, and at least one regiment of [Col. E.F.] Winslow's [4th] brigade being armed with the Henry repeating rifle, .44 caliber, the predecessor of the later Winchester lever-action repeater. Of these troops in action General W.L. Cabell later wrote: "The enemy, armed with Henry rifles, poured a rapid and scathing fire into our commands, which far exceeded any firing we could do from our muzzle-loading Enfield rifles."

In addition to the battle-related artifacts recovered from Site 23JA507, Locality A, during the Phase I archaeological survey and the subsequent data recovery phase, a number of other battlefield relics--all munitions--were collected from the site by an avocational metal detector operator (Figure 5.1). The locations of all of these artifacts have been plotted on a map of Locality A (Figure 5.2), and the types of munitions represented are summarized on Table 5.1. The nonproject-related finds include other examples of the Union's diverse arsenal of breech-loading weapons, including Smith, Cosmopolitan, and Spencer .52 caliber carbines, as well as additional examples of lead shot from spherical case very similar to the specimen found during the data recovery investigation.

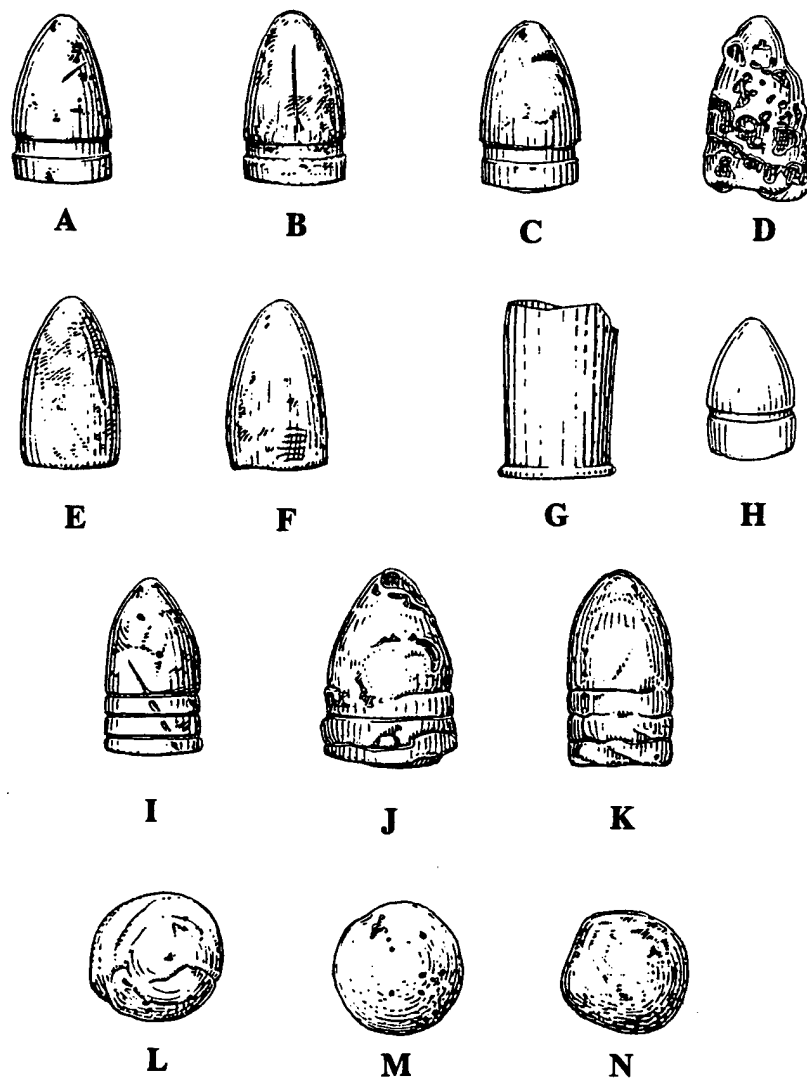


Figure 5.1 Battle-related Artifacts Recovered from Site 23JA507, Locality A, By Avocational Metal Detecting (Nonproject-related Finds). A-D) Smith .52 Caliber Carbine Bullets; E-F) Cosmopolitan/Gwyn and Campbell .52 Caliber Carbine Bullets; G) Spencer .52 Caliber Cartridge Case; H) Colt or Remington .44 Caliber Pistol Bullet; I-K) .54 Caliber "Minie Balls" - "k" Found a Short Distance North of Locality A in Vacant Field; L-N) .65-.66 Diameter Lead Case or Canister Shot (1:1 Scale).

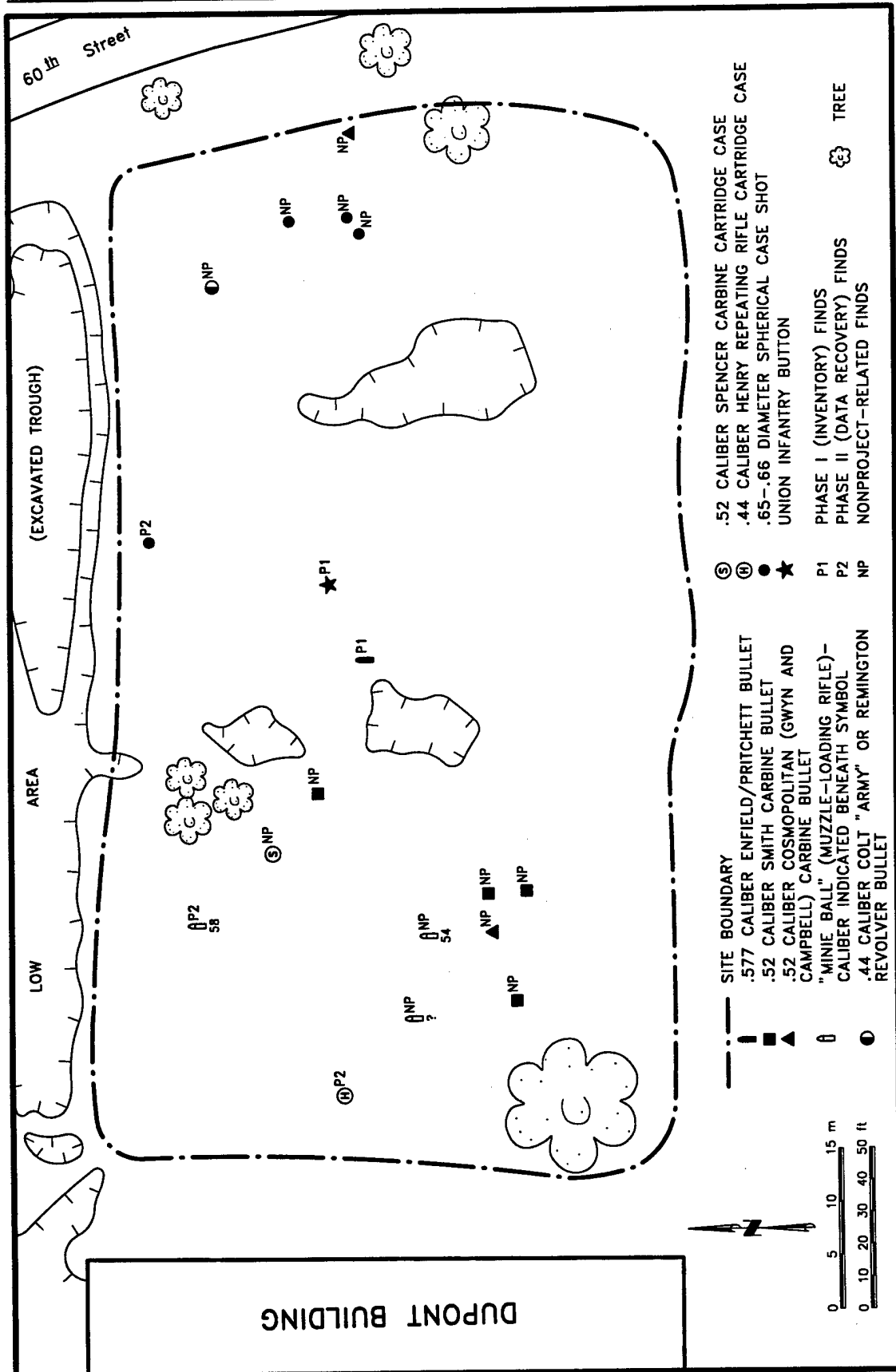


Figure 5.2 Map of Site 23JA507, Locality A, Showing Distribution of Cumulative Battle-related Artifacts Discovered as a Result of Archaeological Investigations and Avocational Relic Collecting.

Table 5.1 Cumulative Known Battle-related Artifacts Collected from Site 23JA507, Locality A.

Artifact	How Found	Remarks
AMMUNITION - Breech Loading Firearms		
Cosmopolitan (Gwyn & Campbell) .52 caliber carbine bullet	Relic collecting	Unfired
Cosmopolitan (Gwyn & Campbell) .52 caliber carbine bullet	Relic collecting	Unfired
Henry .44 caliber rifle cartridge case	Data Recovery	Fired
Smith .52 caliber carbine bullet	Relic collecting	Unfired
Smith .52 caliber carbine bullet	Relic collecting	Unfired
Smith .52 caliber carbine bullet	Relic collecting	Unfired
Smith .52 caliber carbine bullet	Relic collecting	Fired/Mangled
Spencer .52 caliber carbine cartridge case	Relic collecting	Fired
AMMUNITION - Muzzle Loading Firearms		
.54 caliber, 3-ring Minie ball	Relic collecting	Fired
.54 caliber, 3-ring Minie ball	Relic collecting	Unfired
.577 caliber, Enfield (Pritchett) bullet	Phase I survey	Fired
.58 caliber, 3-ring Minie ball	Data Recovery	Fired
AMMUNITION - Pistol		
Colt .44 caliber Army revolver bullet	Relic collecting	Unfired
AMMUNITION - Other		
.35 inch diameter shotgun (?) pellet	Data Recovery	Fired?
ARTILLERY AMMUNITION		
.65 inch diameter lead case shot	Relic collecting	Fired ¹
.65 inch diameter lead case shot	Relic collecting	Fired ¹
.65 inch diameter lead case shot	Relic collecting	Fired ¹
.65 inch diameter lead case shot	Data Recovery	Fired ¹
UNIFORM PARTS		
U.S. Infantry button	Phase I survey	Plain back

¹ All specimens of shot probably derived from same 12 lb spherical case round.

6.0 MANAGEMENT RECOMMENDATIONS

The systematic metal detecting of Site 23JA507, Locality A, was successfully completed by TRC Mariah, and all finds have been analyzed and reported herein. In addition, finds from avocational metal detecting on the subject property between the Phase I archaeological survey and data recovery investigation have been summarized as well. The majority of the archaeological data contained in this small portion of the Big Blue Battlefield has been recovered, and the preconstruction appearance of the site has been photographically documented.

TRC Mariah recommends that although the research potential of the site as defined by NRHP Criterion D has been exhausted, the site retains significance under NRHP Criterion A. Therefore, it is recommended that care be taken to minimize the physical disturbance of Locality A during levee construction to the extent possible.

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APPENDIX A:
POSSIBLE ORIGIN OF ARTIFACTS RECOVERED AT
THE SITE OF THE BATTLES OF THE BIG BLUE,
OCTOBER 22-23, 1864
BY GIL BERGMAN

POSSIBLE ORIGIN OF ARTIFACTS RECOVERED AT
THE SITE OF THE BATTLES OF THE BIG BLUE,
OCTOBER 22-23, 1864

COMPILED
BY

GIL BERGMAN
KANSAS CITY, MISSOURI
JANUARY 1997

LISTING OF ARTIFACTS AND THE UNITS IT MAY HAVE ORIGINATED FROM

ENFIELD RIFLE BULLET (.577 cal.)

4th Kansas State Militia (fought with Jennison's Brigade)¹
6th Missouri State Militia Cavalry (Sanborn's)²
Majority of Confederate units (Shelby's and Marmaduke's Divisions)³

SMITH CARBINE BULLET (.52 cal.)

2nd Arkansas Cavalry (Sanborn's)⁴
7th Missouri State Militia Cavalry (Philips')⁵

COSMOPOLITAN CARBINE BULLET (.52 cal.)

2nd Arkansas Cavalry (Sanborn's)⁶
3rd Wisconsin Cavalry (Jennison's)⁷
4th Iowa Cavalry (Winslow/Benteen's)⁸
4th Missouri Cavalry (Winslow/Benteen's)⁹

THREE RING, HOLLOW BASE, MINNIE BALL (.54 cal.)

Not determined. Probably one of the Missouri State Militia or Confederate units.

COLT OR REMINGTON ARMY REVOLVER BULLET (.44 cal.)

Not determined. Virtually every unit would have contained these type handguns.

SPENCER CARBINE CARTRIDGE (.52 cal.)

2nd New Jersey Cavalry (unattached/Pleasanton's Division)¹⁰
4th Iowa Cavalry (Winslow/Benteen's)¹¹

HENRY RIFLE CARTRIDGE (.44 cal.)

Foster's Missouri Cavalry Battalion (Jennison's)¹²
7th Missouri State Militia Cavalry (Philips')¹³

UNION INFANTRY BUTTON

Not determined. Possibly 4th Kansas State Militia since most of the Missouri State Militia Cavalry units were equipped as cavalry.

SPHERICAL CASE SHOT FROM ARTILLERY

There are three batteries which could have been the source of these shell fragments:

- * Barker's Battery (five 12-pdr. mountain howitzers), with Jennison's Brigade on October 22nd,¹⁴

or, the two Confederate batteries comprising Pratt's 2nd Horse Artillery Battalion, which fought in Marmaduke's Division on October 23rd:

- * Harris' Missouri Battery (one 12-pdr. Napoleon gun, two 6-pdr. smoothbores and one 3.8" James rifle),
- * Hynson's Texas Battery (two 12-pdr. Napoleon guns and one 6-pdr. smoothbore),¹⁵

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12. Grover, loc. cit. 174. Note Capt. Grover makes no mention of being engaged in the fighting on October 22nd, apparently arriving at the time Jennison's Brigade was withdrawing (p. 175).
13. Jenkins, loc. cit., Plate IX.

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15. J. A. Coker, 1st gun sergeant, Harris' Missouri Battery, C.S.A., identifies the type guns in Hynson's Texas Battery as two 12-pdr. smoothbores and one 6 pdr. smoothbore. He identified the guns in Harris' Missouri Battery as being one 12-pdr. Jones [James] rifle, one 12 pdr. smoothbore and one 6 pdr. smoothbore. (Per: "My Recollections of, and Participation in the Events Leading up to, and Immediately Subsequent to, the Battle of Pilot Knob, Mo., Sept. 27th, 1864." Unpublished manuscript from the Cyrus A. Peterson Battle of Pilot Knob Research Collection, Missouri Historical Society, St. Louis, Missouri.)

Capt. William C. F. Montgomery, commanding Co. H, 2nd Missouri Light Artillery (Union) at the Battle of Pilot Knob, Missouri, reported the Confederate 12-pdr. smoothbores were 12-pdr. Napoleons, and not 12-pdr. howitzers of Mexican War vintage, nor were they 12-pdr. mountain howitzers. (Report of Capt. William C. F. Montgomery, dated November 14, 1864; O.R., Series I, Vol. 41, Part I: pp. 458-461.)

Following the Battle of Pilot Knob the Confederates captured a 6-pdr. smoothbore at Hermann, Missouri on October 3, 1864, per the report of Brig. Gen. John B. Clark, Jr., dated December 19, 1864 (Ibid., pp. 678-685) and the report of Col. Colton Greene, dated December 18, 1864 (Ibid., pp. 687-692). The gun was probably included in Pratt's Artillery Battalion, for Harris' and Hynson's Batteries were the only Confederate units possessing 6-pdr. smoothbores. Placing the gun with any other battery would have resulted in ordnance distribution problems.

NOTE: Collins' Missouri Battery (Shelby's Division) was never engaged in the fighting at Byram's Ford on the Big Blue on October 22nd.

The two 3" Ordnance rifles of Co. H, 2nd Missouri Light Artillery and one gun (same type) of Co. L, 2nd Missouri Light Artillery (both with Pleasonton's Division) which took part in the fighting on October 23rd, would not have been able to fire that type shell.